

1-2-2009

# Don't Sit So Close to Me: Restaurant Table Characteristics and Guest Satisfaction

Stephani K.A. Robson  
Cornell University, skr4@cornell.edu

Sheryl E. Kimes Ph.D.  
Cornell University, sek6@cornell.edu

Follow this and additional works at: <http://scholarship.sha.cornell.edu/chrpubs>

 Part of the [Food and Beverage Management Commons](#)

---

## Recommended Citation

Robson, S. K. A., & Kimes, S. E. (2009). Don't sit so close to me: Restaurant table characteristics and guest satisfaction [*Electronic article*]. *Cornell Hospitality Report*, 9(2), 6-16.

This Article is brought to you for free and open access by the The Center for Hospitality Research (CHR) at The Scholarly Commons. It has been accepted for inclusion in Center for Hospitality Research Publications by an authorized administrator of The Scholarly Commons. For more information, please contact [hlmdigital@cornell.edu](mailto:hlmdigital@cornell.edu).

---

# Don't Sit So Close to Me: Restaurant Table Characteristics and Guest Satisfaction

## **Abstract**

Managing restaurant capacity effectively includes making sure that the dining room is equipped with sufficient tables of the appropriate size and type to meet expected demand. Restaurateurs usually make a point of seating parties at the right-size table to maximize seat utilization, and some restaurants set tables fairly close together to make the best use of the available floor space. We examined whether providing guests at a full-service restaurant in New York City with extra personal space improved their satisfaction and meant increased spending or longer lengths of stay. Guests seated at tables that were larger than necessary (that is, parties of two seated at four-tops) did not have significantly different perceptions of satisfaction or spending behavior from those seated at right-size tables (that is, at deuces). However, parties at closely spaced tables reported significantly reduced satisfaction, as well as lower spending per minute when compared with widely spaced tables. Patrons dining at this New York restaurant seemed uncomfortable when tables were set as close as seventeen inches apart, and were more satisfied when the distance was closer to a yard apart. These findings, which apply to the dinner period at a fine-dining restaurant, offer support for the practice of seating parties at appropriately sized tables, and suggest that restaurant operators give careful consideration to the spacing of tables in the dining room.

## **Keywords**

restaurants, guest satisfaction, tables, personal space

## **Disciplines**

Business | Food and Beverage Management | Hospitality Administration and Management

## **Comments**

### **Required Publisher Statement**

© [Cornell University](http://www.cornell.edu). This report may not be reproduced or distributed without the express permission of the publisher

# The Center for Hospitality Research

Hospitality Leadership Through Learning

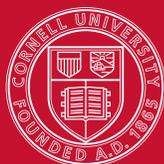


## Don't Sit So Close to Me: Restaurant Table Characteristics and Guest Satisfaction

### Cornell Hospitality Report

Vol. 9, No. 2, January 2009

by Stephani K.A. Robson, and Sheryl E. Kimes, Ph.D.



Cornell University  
School of Hotel Administration

## Advisory Board

**Scott Berman**, *U.S. Advisory Leader, Hospitality and Leisure Consulting Group of PricewaterhouseCoopers*

**Raymond Bickson**, *Managing Director and Chief Executive Officer, Taj Group of Hotels, Resorts, and Palaces*

**Stephen C. Brandman**, *Co-Owner, Thompson Hotels, Inc.*

**Raj Chandnani**, *Vice President, Director of Strategy, WATG*

**Benjamin J. "Patrick" Denihan**, *CEO, Denihan Hospitality Group*

**Michael S. Egan**, *Chairman and Founder, job.travel*

**Joel M. Eisemann**, *Executive Vice President, Owner and Franchise Services, Marriott International, Inc.*

**Kurt Ekert**, *Chief Operating Officer, GTA by Travelport*

**Brian Ferguson**, *Vice President, Supply Strategy and Analysis, Expedia North America*

**Kevin Fitzpatrick**, *President, AIG Global Real Estate Investment Corp.*

**Gregg Gilman**, *Partner, Co-Chair, Employment Practices, Davis & Gilbert LLP*

**Jeffrey A. Horwitz**, *Partner, Corporate Department, Co-Head, Lodging and Gaming, Proskauer Rose LLP*

**Kenneth Kahn**, *President/Owner, LRP Publications*

**Paul Kanavos**, *Founding Partner, Chairman, and CEO, FX Real Estate and Entertainment*

**Kirk Kinsell**, *President of Europe, Middle East, and Africa, InterContinental Hotels Group*

**Nancy Knipp**, *President and Managing Director, American Airlines Admirals Club*

**Gerald Lawless**, *Executive Chairman, Jumeirah Group*

**Mark V. Lomanno**, *President, Smith Travel Research*

**Suzanne R. Mellen**, *Managing Director, HVS*

**David Meltzer**, *Vice President, Sales, SynXis Corporation*

**Eric Niccolls**, *Vice President/GSM, Wine Division, Southern Wine and Spirits of New York*

**Shane O'Flaherty**, *President and CEO, Mobil Travel Guide*

**Tom Parham**, *President and General Manager, Philips Hospitality Americas*

**Carolyn D. Richmond**, *Partner and Co-Chair, Hospitality Practice, Fox Rothschild LLP*

**Richard Rizzo**, *Director, Consumer Research, General Growth Properties, Inc.*

**Saverio Scheri III**, *Managing Director, WhiteSand Consulting*

**Janice L. Schnabel**, *Managing Director and Gaming Practice Leader, Marsh's Hospitality and Gaming Practice*

**Trip Schneck**, *President and Co-Founder, TIG Global LLC*

**Barbara Talbott**, Ph.D., *EVP Marketing, Four Seasons Hotels and Resorts*

**Adam Weissenberg**, *Vice Chairman, and U.S. Tourism, Hospitality & Leisure Leader, Deloitte & Touche USA LLP*



*The Robert A. and Jan M. Beck Center at Cornell University  
Back cover photo by permission of The Cornellian and Jeff Wang.*

Cornell Hospitality Report,  
Volume 9, No. 2 (January 2009)  
Single copy price US\$50  
© 2009 Cornell University

Cornell Hospitality Report is produced for  
the benefit of the hospitality industry by  
The Center for Hospitality Research at  
Cornell University

David Sherwyn, *Academic Director*  
Jennifer Macera, *Associate Director*  
Glenn Withiam, *Director of Publications*

Center for Hospitality Research  
Cornell University  
School of Hotel Administration  
537 Statler Hall  
Ithaca, NY 14853

Phone: 607-255-9780  
Fax: 607-254-2292  
[www.chr.cornell.edu](http://www.chr.cornell.edu)

# The Center for Hospitality Research

Hospitality Leadership Through Learning

Thank you to our  
generous  
Corporate Members

## Senior Partners

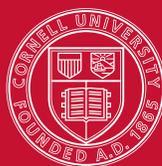
American Airlines Admirals Club  
General Growth Properties, Inc.  
job.travel  
McDonald's USA  
Philips Hospitality  
Southern Wine and Spirits of New York  
Taj Hotels Resorts Palaces  
TIG Global LLC

## Partners

AIG Global Real Estate Investment  
Davis & Gilbert LLP  
Deloitte & Touche USA LLP  
Denihan Hospitality Group  
Expedia, Inc.  
Four Seasons Hotels and Resorts  
Fox Rothschild LLP  
FX Real Estate and Entertainment, Inc.  
HVS  
InterContinental Hotels Group  
JohnsonDiversey  
Jumeirah Group  
LRP Publications  
Marriott International, Inc.  
Marsh's Hospitality Practice  
Mobil Travel Guide  
PricewaterhouseCoopers  
Proskauer Rose LLP  
Smith Travel Research  
SynXis, a Sabre Holdings Company  
Thayer Lodging Group  
Thompson Hotels Group  
Travelport  
WATG  
WhiteSand Consulting

## Friends

American Tesco, LLP • Argyle Executive Forum • Bench Events • Caribbean Hotel Restaurant Buyer's Guide • Cody Kramer Imports • Cruise Industry News • DK Shifflet & Associates • ehotelier.com • EyeForTravel • Fireman's Fund • 4Hoteliers.com • Gerencia de Hoteles & Restaurantes • Global Hospitality Resources • Hospitality Financial and Technological Professionals • hospitalityinside.com • hospitalitynet.org • Hospitality Technology • Hotel Asia Pacific • Hotel China • HotelExecutive.com • Hotel Interactive • Hotel Resource • International CHRIE • International Hotel and Restaurant Association • International Hotel Conference • International Society of Hospitality Consultants • iPerceptions • Lodging Hospitality • Lodging Magazine • Milestone Internet Marketing • MindFolio • Parasol • PhoCusWright • PKF Hospitality Research • RealShare Hotel Investment & Finance Summit • Resort+Recreation Magazine • The Resort Trades • RestaurantEdge.com • Shibata Publishing Co. • Synovate • The Lodging Conference • TravelCLICK • UniFocus • WageWatch, Inc. • WIIWH.COM



Cornell University  
School of Hotel Administration

Don't Sit So Close to Me:

# Restaurant Table Characteristics and Guest Satisfaction

by Stephani K.A. Robson and Sheryl E. Kimes

---

## EXECUTIVE SUMMARY

**M**anaging restaurant capacity effectively includes making sure that the dining room is equipped with sufficient tables of the appropriate size and type to meet expected demand. Restaurateurs usually make a point of seating parties at the right-size table to maximize seat utilization, and some restaurants set tables fairly close together to make the best use of the available floor space. We examined whether providing guests at a full-service restaurant in New York City with extra personal space improved their satisfaction and meant increased spending or longer lengths of stay. Guests seated at tables that were larger than necessary (that is, parties of two seated at four-tops) did not have significantly different perceptions of satisfaction or spending behavior from those seated at right-size tables (that is, at deuces). However, parties at closely spaced tables reported significantly reduced satisfaction, as well as lower spending per minute when compared with widely spaced tables. Patrons dining at this New York restaurant seemed uncomfortable when tables were set as close as seventeen inches apart, and were more satisfied when the distance was closer to a yard apart. These findings, which apply to the dinner period at a fine-dining restaurant, offer support for the practice of seating parties at appropriately sized tables, and suggest that restaurant operators give careful consideration to the spacing of tables in the dining room.

---

## ABOUT THE AUTHORS

A senior lecturer in facilities planning and design, **Stephani Robson** (skr4@cornell.edu) worked for several years in restaurants and retail food operations in her native Canada before deciding to pursue a college degree in the field. A graduate of the Cornell School of Hotel



Administration, she was a food-service designer with Cini-Little International and Marrack Watts in Toronto. Having designed kitchen facilities for hotels, restaurants, airports, hospitals, universities, and catering halls, her academic interests and current doctoral studies center on how environments affect preferences and behavior, with a particular focus on hospitality settings. She is a specialist in restaurant design psychology, and has presented and published her research in a wide range of industry and academic forums around the world.

**Sheryl E. Kimes**, Ph.D., is Singapore Tourism Board Distinguished Professor of Asian Hospitality Management at the Cornell University School of Hotel Administration, where she has also served as interim dean (sek6@cornell.edu). In teaching restaurant revenue management, yield management, and food and beverage management, she has been named the school's graduate teacher of the year three times. Her research interests include revenue management and forecasting in the restaurant, hotel, and golf industries.

She has published over fifty articles in leading journals such as *Interfaces*, *Journal of Operations Management*, *Journal of Service Research*, *Decision Sciences*, and *Cornell Hospitality Quarterly*. She has served as a consultant to many hospitality enterprises around the world, including Chevys FreshMex Restaurants, Walt Disney World Resorts, Ruby's Diners, Starwood Asia-Pacific, and Troon Golf.



The authors would like to thank Fred Eyd and the Center for Hospitality Research for the funding that supported this research. The authors also wish to thank undergraduate student Steve Byung Hwang Huang for his invaluable assistance in preparing the data and extend sincere appreciation to Alexis Kahn and her team for making their guests and their POS data available.

Don't Sit So Close to Me:

# Restaurant Table Characteristics and Guest Satisfaction

by Stephani K.A. Robson and Sheryl E. Kimes

**M**ost restaurant operators will agree that it makes good sense from a revenue management standpoint to match party sizes to table sizes, particularly during busy meal periods. Moreover, most restaurateurs arrange their dining rooms to have the greatest possible number of tables (or seats) on the floor without inappropriately crowding guests. The question we examine here is what effect table size and proximity have on guests' spending, or, to put it more precisely, to determine whether tightly spaced tables interfere with restaurant patrons' satisfaction or affect their patronage behavior.

Our study is motivated by the realization that even the most rigorous application of revenue management practices won't result in greater profits if customers are dissatisfied with their dining experience. Diners are offended, for example, when they notice that operators are using RM strategies that seem unfair or uncomfortable.<sup>1</sup> One complaint that guests often make on dining websites is their discomfort with tables that are closely spaced. From a revenue management perspective, tight table spacing might be viewed as the most efficient use of dining room square footage, but it is unclear whether such an approach is actually doing more harm than good if being too close to neighboring tables is perceived negatively. If we agree that guests want to feel uncrowded when they dine, one question to ask is whether that means a larger table than their party size needs or whether the issue is more one of proximity to adjoining tables. In our earlier work, we have seen indications that some table arrangements generate higher spending per minute than others (based on their design characteristics),<sup>2</sup> but in that study we were not able to find out whether guests were more satisfied at one particular kind of table, all else being equal, nor could we connect satisfaction to spending or length of time at the table. In this report, we attempt to explore connections between the guest's personal space, satisfaction, and behavior. We do this via an observational study that tests whether providing diners with more space—by seating smaller parties at tables that are larger than necessary or by leaving more room between tables—results in more positive outcomes for the operators compared with more traditional RM strategies such as right-size seating and maximizing dining room capacity by spacing tables tightly together.

<sup>1</sup> S.E. Kimes and J. Wirtz, "Perceived Fairness of Demand-based Pricing for Restaurants," *Cornell Hotel and Restaurant Administration Quarterly*, Vol. 43, No. 1 (February 2002), pp. 31–38; and S.E. Kimes, and J. Wirtz, "When Does Revenue Management Become Acceptable?," *Journal of Service Research*, Vol. 7, No. 2 (2003), pp. 125–135.

<sup>2</sup> S.E. Kimes and S.K.A. Robson, "The Impact of Table Characteristics on Dining Duration and Spending," *Cornell Hotel and Restaurant Administration Quarterly*, Vol. 45, No. 4 (October 2004), pp. 333–346.

## Personal Space and Guest Satisfaction

We all recognize a need for room around our bodies that is free from encroachment by others, particularly strangers. The study of human spatial behavior—how we position ourselves relative to one another—has come to be known as proxemics. Edward Hall coined this term, which he defined as the study of "the interrelated observations and theories of man's use of space as a specialized elaboration of culture."<sup>3</sup> Proxemic behavior relates to how people create personal space for themselves in social and transitory public settings. Its basic premises are by now familiar.<sup>4</sup> We need little personal space with people we know well, but we prefer to keep those we don't know at a reasonable distance (reasonable being defined differently in various cultures). We feel real discomfort if someone violates that space without good reason. In restaurant settings where we are often surrounded by parties of strangers, we prefer to sit at tables where we can have the most control over our personal space, either by having ample space to work with or by having some kind of physical feature separating us from nearby diners.<sup>5</sup> This desire for more personal space may explain the popularity of booths, with their tangible physical boundaries.

Here are three theories that attempt to explain why we use space the way we do. The first, affiliative conflict theory, suggests that interpersonal distance is a function of two competing needs: to affiliate with others and to protect one's personal space.<sup>6</sup> The spacing we choose in a given circumstance is at a point of equilibrium between these two needs, which may vary as an interaction continues. Another theoretical view argues that interpersonal distance serves as a so-

<sup>3</sup> E.T. Hall, *The Hidden Dimension* (New York: Doubleday, 1966), p. 1.

<sup>4</sup> P. Underhill, *Why We Buy: The Science of Shopping* (New York: Simon & Schuster, 1999).

<sup>5</sup> S.K.A. Robson, "Scenes from a Restaurant: Privacy Regulation in Stressful Situations," *Journal of Environmental Psychology*, Vol. 28, No. 4 (2008), pp. 373–378.

<sup>6</sup> M. Argyle and J. Dean, "Eye Contact, Distance, and Affiliation," *Sociometry*, Vol. 28, No. 3 (1965), pp. 289–304.

cial regulator.<sup>7</sup> Friends will adopt closer distances than will acquaintances, and in turn acquaintances will be approached more closely than total strangers might be.<sup>8</sup> A third perspective is that our spatial behavior is a response to the stress of having less control over an environment or a situation than one desires. In this view, stress abates when one regains an appropriate level of control either through one's own action or through a change in circumstance.<sup>9</sup> One area where we seek control is in creating and maintaining privacy. If we feel that we have a lack of privacy in a public situation, our stress level goes up,<sup>10</sup> and it is likely that our satisfaction with our experience will decrease. Close proximity, defined in most western cultures as being within eighteen inches (45 cm) of someone else,<sup>11</sup> can be overstimulating and stressful if the person nearby is not an intimate of ours, and we will seek ways to reduce our discomfort by either increasing our personal space when conditions allow or by leaving the environment as soon as possible.

Despite our desire to avoid stress and maintain privacy, we still need some degree of stimulation to make experiences interesting and engaging. The key for restaurateurs is to provide just the right amount of stimulation to attract and sustain guests' interest without going overboard. An appropriately stimulating environment encourages what Mehrabian and Russell call "approach behaviors,"<sup>12</sup> which include entering an environment, spending time there, and making purchases.<sup>13</sup> The link between stimulation and approach

behaviors can be seen when we consider a bland restaurant design. Unless there is an exceptional reason to stay, patrons are likely to dine elsewhere.

Researchers have identified direct links between stimulation, approach behavior, and satisfaction.<sup>14</sup> If an environment offers the appropriate amount of stimulation for its customers, users are more likely to be satisfied as well as demonstrate approach behaviors that increase profits, such as patronizing the restaurant in the first place or increasing their spending once they are there.<sup>15</sup> Earlier work has shown that the optimal supply of dining seats not only mirrors the party sizes that patronize the restaurant but also offers guests' psychological comfort.<sup>16</sup> Making guests comfortable includes giving them appropriate amounts of personal space so that they can feel adequately separated from strangers at other tables.

Another way of offering comfort is to make it easier for diners to achieve their goals, which in the course of a meal typically involves interaction with dining companions. Proxemic studies show that most people prefer to sit at right angles to their partners in conversation.<sup>17</sup> Compare that finding to the arrangement most restaurants offer parties of two. Only in slow times would couples be seated at a four-top that would allow them to sit at an angle. Instead, most parties of two are seated at the typical face-to-face deuces. Proxemics suggests that this arrangement can be viewed as confrontational. Certainly it's hard for two people to have an intimate discussion with a table between them. Fine dining

---

<sup>7</sup> I. Altman, *The Environment and Social Behavior* (Monterey, CA: Brooks/Cole, 1975).

<sup>8</sup> E. Sundstrom and I. Altman, "Interpersonal Relationships and Personal Space: Research Review and Theoretical Model," *Human Ecology*, Vol. 4, No. 1 (1976), pp. 47-67.

<sup>9</sup> G.W. Evans and R.B. Howard, "Personal Space," *Psychological Bulletin*, Vol. 80, No. 4 (1973), pp. 334-344.

<sup>10</sup> Evans, *op. cit.*

<sup>11</sup> Hall, 1966, *op. cit.*

<sup>12</sup> A. Mehrabian and J.A. Russell, *An Approach to Environmental Psychology* (Cambridge, MA: MIT Press, 1974).

<sup>13</sup> R.J. Donovan, J.R. Rossiter, G. Marcolyn, and A. Nesdale, "Store Atmosphere and Purchasing Behavior," *Journal of Retailing*, Vol. 70, No. 3

---

(1994), pp. 283-294.

<sup>14</sup> J. Wirtz, A.S. Mattila, and R.L.P. Tan, "The Moderating Role of Target-Arousal on the Impact of Affect on Satisfaction: An Examination in the Context of Service Experiences," *Journal of Retailing*, Vol. 76, No. 3 (2000), pp. 347-365.

<sup>15</sup> A.S. Mattila and J. Wirtz, "Arousal Expectations and Service Evaluations," *International Journal of Service Industry Management*, Vol. 17, No. 3 (2006), pp. 229-244.

<sup>16</sup> S.E. Kimes and G.M. Thompson, "Restaurant Revenue Management at Chevys: Determining the Best Table Mix," *Decision Sciences Journal*, Vol. 35, No. 3 (2004), pp. 371-391.

<sup>17</sup> A. Mehrabian and S.G. Diamond, "Seating Arrangement and Conversation," *Sociometry*, Vol. 34, No. 2 (1971), pp. 281-289.

## Diners at closely spaced tables were significantly more dissatisfied with almost every dimension of their dining experience than were those at generously spaced tables.

restaurants recognize this and may offer side-by-side seating for parties of two, especially couples. This kind of seating is more efficient from a revenue management standpoint than placing a couple at a table for four, but is likely to be viewed as too intimate for business dining.

The issue of balancing personal space, stimulation, and guest satisfaction raises the question of whether guests seated at a table that offers more personal space would exhibit increased approach behaviors and be more satisfied with their dining experience than would guests seated at tables that offered less personal space. In this regard we speak of two different kinds of personal space: namely, space between tables and tables meant for larger parties. This leads to the following three questions, which we tested in this study.

- (1) Do parties of two express higher levels of satisfaction when seated at four-top tables than they do when they are seated at tables for two?;
- (2) Do parties seated at tables that are farther away from adjacent tables express higher levels of satisfaction than parties seated at tables that are closer together?; and
- (3) Do the size and spacing of tables influence how much guests spend or how long they stay?

This last research question relates to the standard RM practice of controlling how long a patron uses a table as a way of managing capacity. As discussed elsewhere, meals of shorter duration allow the restaurateur to process more guests in a particular period of time.<sup>18</sup> We have seen that certain table types appear to reduce duration, particularly those that offer guests reduced psychological comfort.<sup>19</sup> If having less personal space reduces the ability to control privacy and therefore increases stress, then it is possible that diners will adopt “avoidance” behaviors, which are the opposite of the approach behaviors described above. One

<sup>18</sup> S.E. Kimes, J. Wirtz, and B.M. Noone, “How Long Should Dinner Take? Measuring Expected Meal Duration for Restaurant Revenue Management,” *Journal of Revenue and Pricing Management*, Vol. 1, No. 3 (2002), pp. 220–233; and B.M. Noone, S.E. Kimes, A. Mattila, and J. Wirtz, “The Effect of Meal Pace on Customer Satisfaction,” *Cornell Hotel and Restaurant Administration Quarterly*, No. 48, No. 3 (August 2007), pp. 231–245.

<sup>19</sup> Kimes and Robson, *op.cit.*

avoidance behavior is to leave the environment, so we might expect to see shorter stays when guests are uncomfortable, and another is reduced spending. Effective revenue management strategies are those that result in long-term benefits to the operator. Therefore, understanding how personal space influences approach and avoidance behaviors in a restaurant as well as guest satisfaction is important to making successful RM decisions both during the design stage as well as once the restaurant is up and running.

### Methodology

To test whether guests are more satisfied or behave differently when they have extra personal space, we extracted POS data and surveyed guests at an 80-seat, full-service restaurant in the Soho neighborhood of New York City. This restaurant was selected for the study because it offered the following three distinct advantages for our research: (1) its seating arrangements included both standard face-to-face deuces and rectangular four-tops; (2) because the restaurant welcomed a high volume of parties of two, it periodically was required to seat these parties at the four-tops; and (3) it used a point-of-sale system for recording all meal transactions, thus facilitating the collection of spending and dining duration data for each party. The dining room offered a variety of table spacings. Some tables for two were closely spaced, but others were relatively far apart. In addition, the restaurant featured a *prix fixe* menu. This allowed us greater control in our spending analysis, because we could assess the effects of personal space on spending for extras, such as drinks and surcharge entrées. Last, the restaurant’s management was also eager to obtain general satisfaction data from its guests, so we were able to dovetail our study with the restaurant’s own satisfaction survey program.

Our data collection process was relatively straightforward. During two month-long periods, we collected point-of-sale data and surveyed the restaurant’s dinner guests. Each party’s check was identified in the POS system by a transaction number and a table number. Using those numbers we could match transactions to specific groups of diners, determine what was purchased, and record how long the check was open (an imperfect but reasonable proxy for

**EXHIBIT 1****Personal space questionnaire**

This restaurant and Cornell University are working together to study how to create better dining experiences. You can help by taking a moment to complete the following short survey. Please leave your completed survey in the check folder, or you may give it to the host as you depart. Thank you for your feedback!

1. Please indicate your agreement with each of the following questions about your dining experience today.

(1 = Strongly Disagree, 7 = Strongly Agree)

I was pleased with my dining experience

1 2 3 4 5 6 7

I had enough room at my table

1 2 3 4 5 6 7

I was happy with my food

1 2 3 4 5 6 7

This restaurant was a wise choice

1 2 3 4 5 6 7

I felt rushed during my dining experience

1 2 3 4 5 6 7

The servers did a good job for me

1 2 3 4 5 6 7

I was uncomfortable in my seat

1 2 3 4 5 6 7

The staff was friendly and hospitable

1 2 3 4 5 6 7

My table was too close to other tables

1 2 3 4 5 6 7

I was very dissatisfied by my experience

1 2 3 4 5 6 7

2. Is this your first visit to this restaurant?

Yes No

If yes, how did you find out about this restaurant?

\_\_\_\_\_

3. How likely are you to return to this restaurant?

(1 = Very Unlikely, 7 = Very Likely)

1 2 3 4 5 6 7

4. How likely are you to recommend this restaurant to others?

(1 = Very Unlikely, 7 = Very Likely)

1 2 3 4 5 6 7

5. Please tell us a little about yourself (to be completed by only one member of your party):

You are: Male \_\_\_\_\_ Female \_\_\_\_\_

Your age is: Under 25 \_\_\_\_\_ 26-49 \_\_\_\_\_ 50+ \_\_\_\_\_

6. How often do you eat out at a restaurant for dinner?

(please choose one)

More than twice a week \_\_\_\_\_

1-2 times a week \_\_\_\_\_

2-3 times a month \_\_\_\_\_

Once a month \_\_\_\_\_

Less than once a month \_\_\_\_\_

7. If you were the manager of this restaurant, what would you change about the experience?

\_\_\_\_\_

THANK YOU FOR PARTICIPATING AND FOR DINING WITH US TODAY.

meal duration<sup>20</sup>). To address outliers, we eliminated checks that showed spending of less than \$10 or more than \$200 per person, as well as those that were open for less than ten minutes or more than three hours. We also eliminated split checks and other anomalies.

To collect satisfaction data, servers presented guests with a short questionnaire along with the check (see Exhibit 1). The questionnaire solicited feedback on the food, service, table characteristics, overall guest experience, and likelihood of return, as well as simple demographic information such as age and gender. The survey included specific questions regarding whether (1) guests felt that they had enough room at their table, (2) they felt their table was adequately spaced relative to others, and (3) they felt uncomfortable at their table. These questions were included so that we could be sure we were measuring seating satisfaction as distinct from satisfaction with the food, the service, or other aspects of the restaurant. Guests were asked to rate each aspect of their dining experience on a seven-level Likert scale, and reverse scaling was used on four of the questions to help control for response error. The server collected completed questionnaires and stapled them to the merchant's copy of that particular guest's check. In turn, the cashier recorded the transaction number and the table number from the check on the survey so that we could accurately match up the POS data with the survey responses.

Once all the data were collected, we combined data from the restaurant's POS system with the completed surveys for analysis. To keep the analysis straightforward, we used only the data from parties of two, especially given the evidence that larger party sizes have both higher spending and longer durations than smaller parties.<sup>21</sup> Specifically, we tried to isolate parties of two that had completed the questionnaire in full and that were seated at either a typical duce or a table for four, which would allow us to accurately compare satisfaction and behavior data for these two table sizes at various table locations. The POS data also allowed us to control for any influence from the server or day of the week.

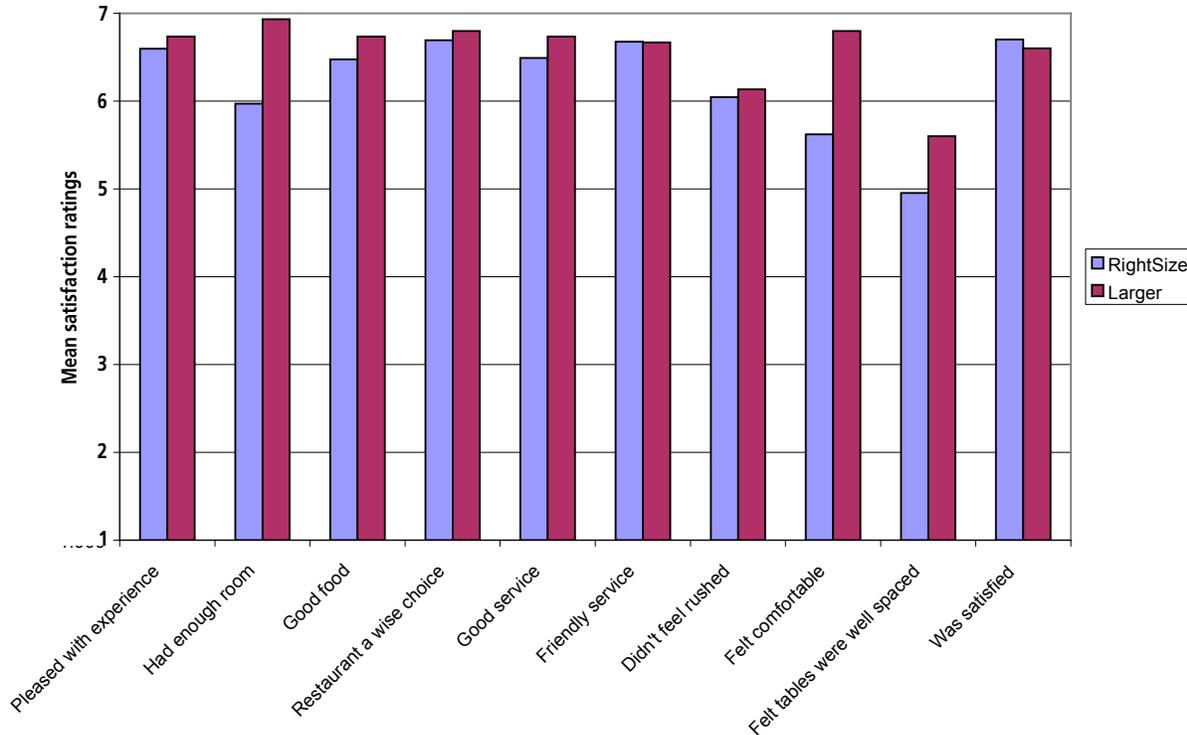
## Findings

After excluding transactions that did not qualify and eliminating incomplete surveys, we had a total of 285 valid records, which were well distributed across the different table locations in the dining room. However, not as many parties of two were seated at four-tops as we had originally hoped; only 22 of these 285 observations were for parties seated at larger tables. (This restaurant clearly was largely successful in meeting the revenue management goal of matching parties and table sizes). This imbalance raises questions of

<sup>20</sup> Kimes *et al.*, 1999, *op.cit.*

<sup>21</sup> Kimes and Thompson, *op.cit.*

## Satisfaction ratings by table size



Note: Ratings are based on a scale where 1 indicated great dissatisfaction and 7 indicated considerable satisfaction.

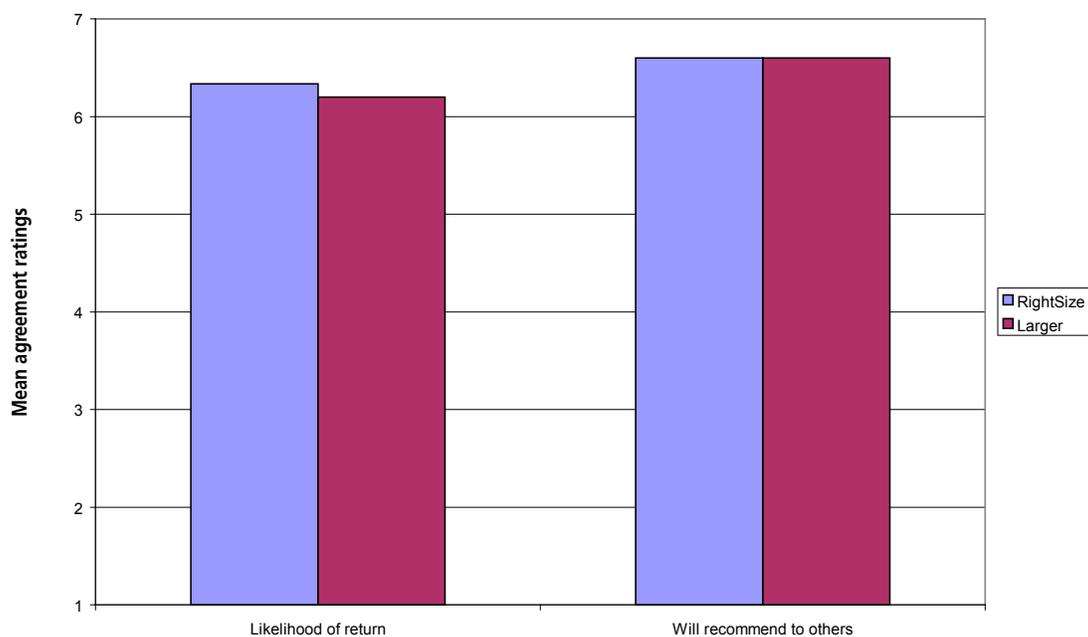
validity for our statistical analysis, but there are nevertheless interesting findings that should be valuable to restaurateurs.

**Table size.** In most cases, mean satisfaction ratings were slightly higher when guests were seated at larger tables than their party required (see Exhibit 2). Diners seated at larger tables gave a higher rating to the food (6.73), the service (6.73), the timing of the meal (6.13), and their overall experience (6.73) than did those guests who were seated at a right-size table, although none of these differences were statistically significant. Both sets of diners had similar ratings of whether they felt the restaurant was a wise choice for their dining occasion (6.80 for diners at larger tables and 6.70 for diners at right-size tables). Only two of our satisfaction measures showed statistically significant differences for the two table types when the unequal sample sizes were taken into

account.<sup>22</sup> Those were whether guests felt they had enough room at their table and whether guests felt comfortable. In both cases, guests seated at larger tables indicated that they felt they had more room at their table (6.93, compared to 5.97 for those at right-size tables) and were much more likely to feel comfortable than diners at right-size tables did (6.80 versus 5.62). We obtained similar results when we asked guests whether they felt the spacing between tables was appropriate. Guests at larger tables were less likely to feel crowded by adjacent tables than were guests at right-size tables. Parties seated at the four-tops rated the quality of the table spacing higher (5.60) than did those at the deuces

<sup>22</sup> Levene's Test was used to determine whether the variances of the unbalanced samples were significantly different, and the appropriate t-test was performed based on the results.

## Future behavior by table size



Note: Ratings are based on a scale where 1 indicated low agreement and 7 indicated considerable agreement.

(4.96). This difference was not statistically significant, but we note that this was the lowest of any of the satisfaction ratings we measured. Having said that, we found no noticeable difference by table size regarding whether our respondents would return to the restaurant or be willing to recommend it to others (Exhibit 3).

On the other hand, we did see a noticeable difference in spending behavior between the two table sizes, although it was not statistically significant (Exhibit 4). Parties at the right-size table spent less per person (\$58.35) than did those seated at a larger table (\$67.98).

Our last test, whether parties of two seated at larger tables had a longer duration than those seated at deuces, showed that those at the four-top tables stayed 6.7-percent longer than those at the deuces (134.13 minutes at the four-tops versus 125.65 minutes at the smaller tables; see Exhibit 5). This difference was not statistically significant. When we combined average check and duration into a single measure of spending per minute, or SPM, we only noticed a small difference for the two groups (\$.477 per minute for right-size tables and \$.507 per minute at larger tables) that was again not statistically significant.

**Table spacing.** Regardless of table size, the guests gave the lowest satisfaction ratings of all to the issue of table spacing (overall mean: 4.99) This finding prompted us to

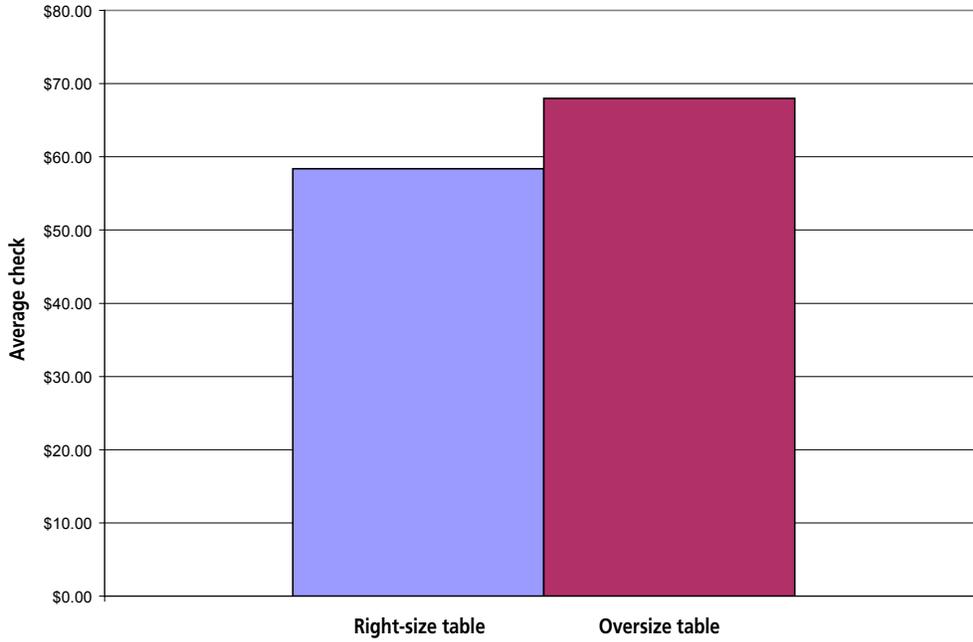
look more closely at the effect that the distance between tables might have had on satisfaction ratings, spending, and meal duration. The spacing between tables at this restaurant varied considerably. Some two-tops along a banquette were spaced only 17 inches apart (less than half a meter), while other two-tops along the window were as much as 65 inches away from the nearest table. We categorized tables that were 20 inches or less from an adjacent table as being “near,” more than 20 inches but less than 36 inches away as “moderate,” and 36 inches or more (essentially, a minimum of a meter) away from the next closest table as “far.” This restaurant had parallel two-top seating in two contrasting locations in the dining room—along an exterior wall and along an interior railing—which allowed us to also compare similar tables in two distinctive locations to see whether table location was a factor in satisfaction or behavior, as we had seen in earlier studies.<sup>23</sup>

We did see significant differences in the satisfaction ratings for different levels of table spacing (Exhibit 6, overleaf). Diners at closely spaced tables rated the appropriateness of the spacing much lower (4.27) than did guests at widely spaced tables (6.41). Even moderately spaced tables left guests less happy. Diners at the moderately spaced tables rated their table spacing almost as low as did those at the

<sup>23</sup> Kimes and Robson, *op.cit.*

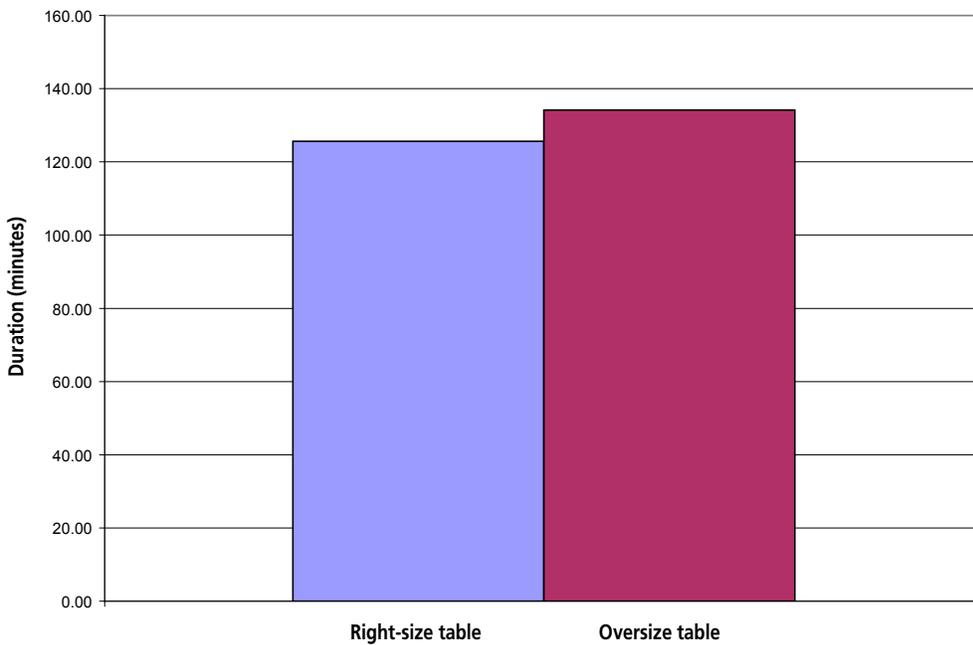
**EXHIBIT 4**

**Spending by table size**

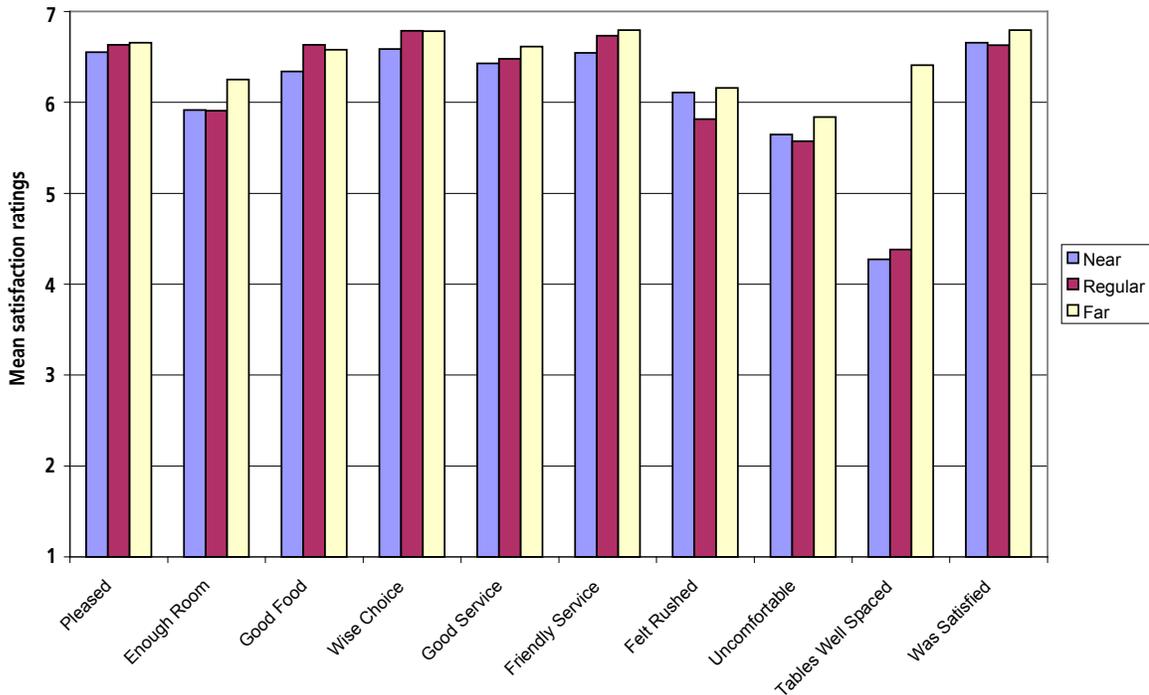


**EXHIBIT 5**

**Duration by table size**



## Satisfaction ratings by table spacing



Note: Ratings are based on a scale where 1 indicated great dissatisfaction and 7 indicated considerable satisfaction.

closest tables (4.38). Comparing satisfaction ratings for other components of the dining experience, we saw that diners seated at tables that were tightly spaced generally expressed lower satisfaction in almost every category. Compared to those at the widely spaced tables, guests seated at tables near to each other were less happy with the food (5.92 vs. 6.25), the friendliness of the service (6.55 vs. 6.80), and the wisdom of this choice of restaurant (6.59 vs. 6.78). All of these differences were statistically significant.

By the same token, parties that indicated greater satisfaction with table spacing also gave higher ratings to all other parts of their dining experience as compared to those who were dissatisfied with the distance between tables. The average of all satisfaction scores for diners seated at tables that were far apart (6.49) was significantly higher than the overall satisfaction rating for those at tables that were moderately spaced tables (6.11) and those at closely spaced tables (6.10). Even when we removed the ratings directly related to table spacing from the overall satisfaction average, this pattern still held. The revised mean satisfaction ratings were 6.50 for well spaced tables, 6.35 for moderately spaced tables, and 6.31 for tables that were close together. Clearly, the spacing between tables had a substantial effect on guest satisfaction. In that regard, guests seated close to other tables expressed a significantly lower likelihood of returning (6.16)

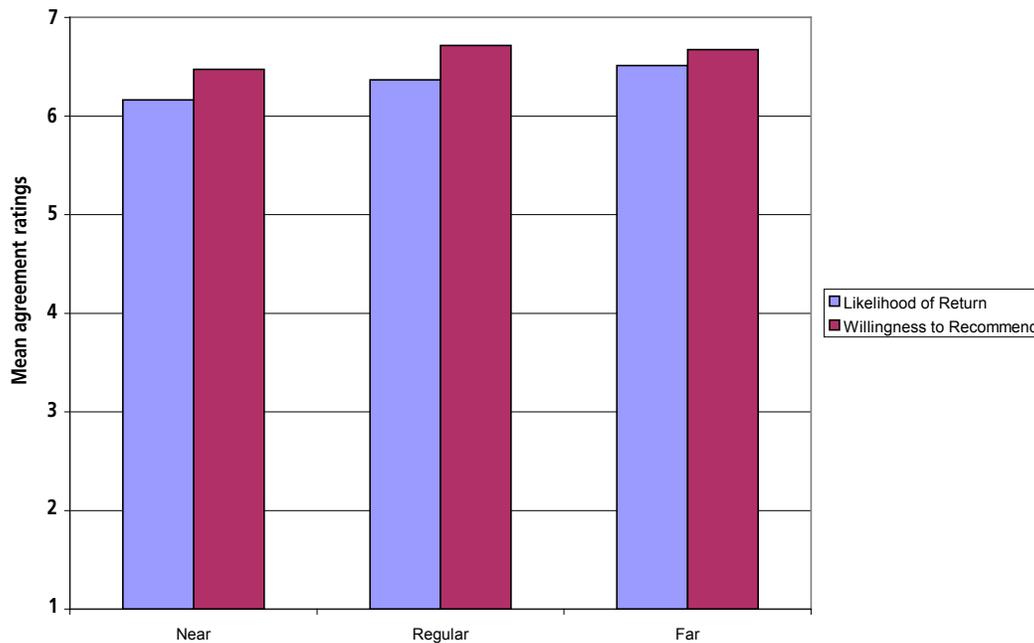
than those at well-spaced tables (6.51), whereas willingness to recommend the restaurant to others was statistically the same regardless of table spacing (Exhibit 7).

**Spending levels.** It wasn't just satisfaction that was influenced by the proximity of neighboring tables. We also found that spending and duration varied with table spacing (Exhibit 8). Parties seated near to other tables had a significantly higher rate of spending (\$0.493 per minute) than did tables that were far apart (\$0.462). This was largely due to a longer meal duration at tables that were well spaced (128 minutes vs. 122 minutes at tightly spaced tables). However, this difference in duration was not itself statistically significant, nor were any other differences in diner behavior that we noted.

### Spacing, Not Size

Our findings seem to support the argument that restaurant goers appreciate at least a modicum of privacy. While our respondents appreciated generous personal space, these findings indicate that table size in and of itself seems not to invoke personal space issues (based on the satisfaction and behavior data), but table positioning does do so.

To confirm that table spacing rather than table location was responsible for our results, we compared the duration, satisfaction, and spending results for the closely spaced two-

**EXHIBIT 7****Future behavior by table spacing****EXHIBIT 8****Diner spending and duration behaviors by table spacing**

	Near Spacing (n = 122)	Moderate Spacing (n = 71)	Far Spacing (n = 92)
<b>Average check</b>	\$59.09	\$62.02	\$56.80
<b>Duration</b>	122 min.	130 min.	128 min.
<b>Spending per minute (SPM)</b>	\$.493	\$.484	\$.462

top tables along the window wall banquette with those of the closely spaced tables on the interior railing. As shown in Exhibits 9 and 10 (next page), we saw no difference in results between these two table locations. Patrons had the same satisfaction ratings and dining behaviors in both locations, suggesting that the close spacing mattered more to guests than table location.

Clearly, closely spaced tables diminished the guests' experience at this particular restaurant, which in turn translated into a reduced likelihood of return. Although diners at closely spaced tables exhibited a slightly higher level of spending per minute, the reduced satisfaction with these tables should be cause for concern.

**Implications for Restaurateurs**

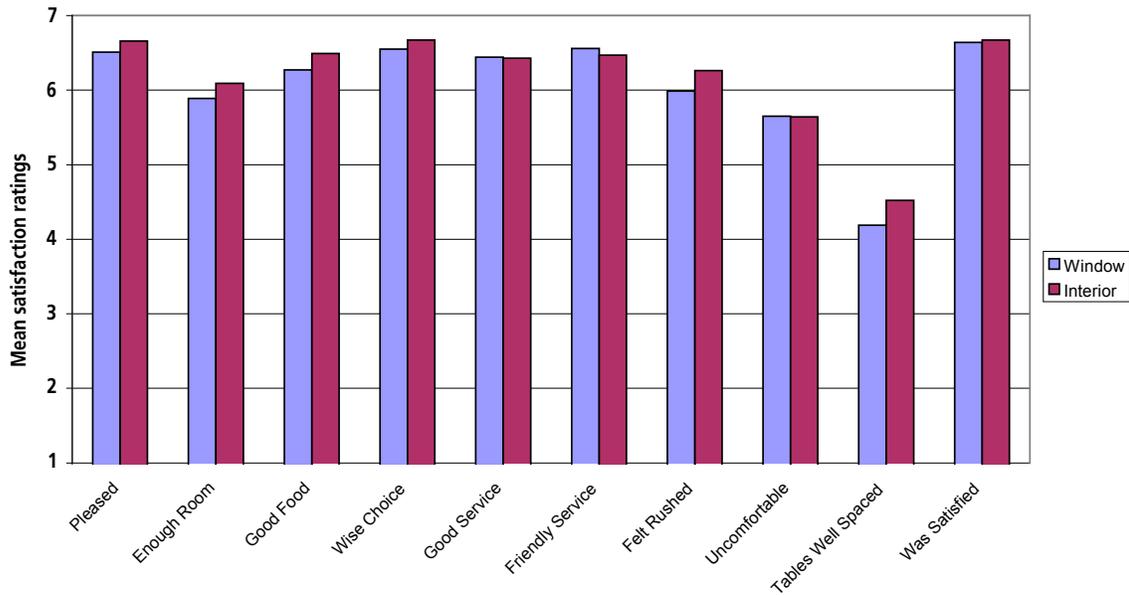
We must caution that our study occurred at only one restaurant, during one meal period. Thus, the implications below

would apply most directly to dinner at a full-service, upscale restaurant. It's possible that we would see different outcomes during lunch at the same restaurant. Moreover, our results regarding oversize tables are colored somewhat by the small number of couples seated at four-tops.

Given what is known about proxemics and psychological comfort, it is not surprising that guests seated at tables that afforded them more personal space would feel more comfortable. However, this greater psychological comfort from having a larger-than-necessary table did not appear to influence the ratings of other components of the dining experience nor did it affect guests' ratings of overall satisfaction. We did see some indication of an effect on spending. Guests at tables larger than required had a higher check average than those at tables matched to their party size, although this effect was not statistically significant. Comfort levels in general did not appear to result in greater spending,

**EXHIBIT 9**

**Satisfaction ratings of closely spaced tables by location**



**EXHIBIT 10**

**Spending and duration behaviors by table location for closely spaced tables**

	Window (n = 85)	Interior railing (n =58)
Average check	\$58.81	\$57.89
Duration	125 min.	123 min.
Spending per minute (SPM)	\$ .487	\$ .480

so we can tentatively say that the provision of extra room at the table was an influential factor in spending behavior.

Slightly higher check averages, however, should not deter restaurateurs from seating parties at right-size tables. Although there are modest increases in some satisfaction measures when guests are seated at tables that are larger than necessary, these don't appear to translate into dramatically improved satisfaction, and there is no real difference in spending or duration across table sizes. Any slight increase in spending associated with seating guests at larger tables doesn't appear to be enough to offset the lost revenue from inefficient seat utilization (and the lower spending per minute that we recorded at the large tables). Diners at over-size tables are no more likely to return or recommend the restaurant to others than are those seated at a correctly sized table, and both are equally likely to be satisfied customers. The most effective revenue management approach remains monitoring party sizes and ensuring that all parties are seated at tables of appropriate size.

Restaurateurs may want to consider reasonably wide spacing between tables, based on this study. Diners at closely

spaced tables were significantly more dissatisfied with almost every dimension of their dining experience than were those at tables that are far apart. Spending per minute was affected not because those at closely spaced tables spent more but because they recorded shorter meal duration. While revenue management principles suggest that shorter durations are not always undesirable—particularly when they are accompanied by higher check averages and quicker table turns—the apparent reduction in guest satisfaction by having tables too close together that we observed in this study should not be taken lightly. Although we did not see a relationship between satisfaction and likelihood of return or willingness to recommend this restaurant, other studies have repeatedly shown the negative effects of customer dissatisfaction.<sup>24</sup> Clearly, further research is needed to see just how influential the distance between tables might be in terms of guest satisfaction and behavior, and to identify the optimal table spacing for generating revenues, maximizing the use of dining space, and creating satisfied guests. ■

<sup>24</sup> Noone *et al.*, *op cit.*

# Cornell Hospitality Reports Index

[www.chr.cornell.edu](http://www.chr.cornell.edu)

## 2009 Reports

Vol 9, No. 1 The Job Compatibility Index: A New Approach to Defining the Hospitality Labor Market, by William J. Carroll, Ph.D., and Michael C. Sturman, Ph.D.

## 2008 Reports

Vol 8, No. 20 Key Elements in Service Innovation: Insights for the Hospitality Industry, by Rohit Verma, Ph.D., with Chris Anderson, Ph.D., Michael Dixon, Cathy Enz, Ph.D., Gary Thompson, Ph.D., and Liana Victorino, Ph.D.

Vol 8, No. 19 Nontraded REITs: Considerations for Hotel Investors, by John B. Corgel, Ph.D., and Scott Gibson, Ph.D.

Vol 8, No. 18 Forty Hours Doesn't Work for Everyone: Determining Employee Preferences for Work Hours, by Lindsey A. Zahn and Michael C. Sturman, Ph.D.

Vol 8, No. 17 The Importance of Behavioral Integrity in a Multicultural Workplace, by Tony Simons, Ph.D., Ray Friedman, Ph.D., Leigh Anne Liu, Ph.D., and Judi McLean Parks, Ph.D.

Vol 8, No. 16 Forecasting Covers in Hotel Food and Beverage Outlets, by Gary M. Thompson, Ph.D., and Erica D. Killam

Vol 8, No. 15 A Study of the Computer Networks in U.S. Hotels, by Josh Ogle, Erica L. Wagner, Ph.D., and Mark P. Talbert

Vol 8, No. 14 Hotel Revenue Management: Today and Tomorrow, by Sheryl E. Kimes, Ph.D.

Vol 8, No. 13 New Beats Old *Nearly* Every Day: The Countervailing Effects of Renovations and Obsolescence on Hotel Prices, by John B. Corgel, Ph.D.

Vol. 8, No. 12 Frequency Strategies and Double Jeopardy in Marketing: The Pitfall of Relying on Loyalty Programs, by Michael Lynn, Ph.D.

Vol. 8, No. 11 An Analysis of Bordeaux Wine Ratings, 1970–2005: Implications for the Existing Classification of the Médoc and Graves, by Gary M. Thompson, Ph.D., Stephen A. Mutkoski, Ph.D., Youngran Bae, Liliana Lelacqua, and Se Bum Oh

Vol. 8, No. 10 Private Equity Investment in Public Hotel Companies: Recent Past, Long-term Future, by John B. Corgel, Ph.D.

Vol. 8, No. 9 Accurately Estimating Time-based Restaurant Revenues Using Revenue per Available Seat-Hour, by Gary M. Thompson, Ph.D., and Heeju (Louise) Sohn

Vol. 8, No. 8 Exploring Consumer Reactions to Tipping Guidelines: Implications for Service Quality, by Ekaterina Karniouchina, Himanshu Mishra, and Rohit Verma, Ph.D.

Vol. 8, No. 7 Complaint Communication: How Complaint Severity and Service Recovery Influence Guests' Preferences and Attitudes, by Alex M. Susskind, Ph.D.

Vol. 8, No. 6 Questioning Conventional Wisdom: Is a Happy Employee a Good Employee, or Do Other Attitudes Matter More?, by Michael Sturman, Ph.D., and Sean A. Way, Ph.D.

Vol. 8, No. 5 Optimizing a Personal Wine Cellar, by Gary M. Thompson, Ph.D., and Steven A. Mutkoski, Ph.D.

Vol. 8, No. 4 Setting Room Rates on Priceline: How to Optimize Expected Hotel Revenue, by Chris Anderson, Ph.D.

Vol. 8, No. 3 Pricing for Revenue Enhancement in Asian and Pacific Region Hotels: A Study of Relative Pricing Strategies, by Linda Canina, Ph.D., and Cathy A. Enz, Ph.D.

Vol. 8, No. 2 Restoring Workplace Communication Networks after Downsizing: The Effects of Time on Information Flow and Turnover Intentions, by Alex Susskind, Ph.D.

Vol. 8, No. 1 A Consumer's View of Restaurant Reservation Policies, by Sheryl E. Kimes, Ph.D.

## 2008 Hospitality Tools

Building Managers' Skills to Create Listening Environments, by Judi Brownell, Ph.D.

## 2008 Industry Perspectives

Industry Perspectives No. 2 Sustainable Hospitality<sup>®</sup>: Sustainable Development in the Hotel Industry, by Hervé Houdré

Industry Perspectives No. 3 North America's Town Centers: Time to Take Some Angst Out and Put More Soul In, by Karl Kalcher

## 2007 Reports

Vol. 7, No. 17 Travel Packaging: An Internet Frontier, by William J. Carroll, Ph.D., Robert J. Kwortnik, Ph.D., and Norman L. Rose



[www.chr.cornell.edu](http://www.chr.cornell.edu)