

Designing a Questionnaire to Assess the Dining Habits and Patterns of the Santa Fe Grill's Customers

This illustration extends the chapter discussions on questionnaire development via the flowerpot approach. Read through this restaurant example, and using the actual Screening Questions and questionnaire (Exhibit 13.16), answer the questions at the end.

Background of the Situation

In early 2004, two recent college business graduates (one majored in finance and the other in management) came together with a new restaurant concept for a Southwestern casual dining experience that focused on a Mexican theme with a variety of good food items and a friendly family-oriented atmosphere. After six months of planning and creating detailed business and marketing plans, the two entrepreneurs were able to get the necessary capital to build and open their restaurant—calling it the Santa Fe Grill Mexican Restaurant.

After the initial six months of success, they noticed that revenues, traffic flow, and sales were declining and realized that they knew only the basics about their patrons. Neither of the owners had taken any marketing courses beyond basic marketing in college, so they turned to a friend who worked in marketing for some advice. Initially they were advised to hire a marketing research firm to collect some primary data about people's dining out habits and patterns. Looking into marketing research consulting firms, they quickly found out that these firms wanted too much money to conduct the research. So they went to a Barnes & Noble bookstore and purchased a practitioner's book on how to do marketing research studies. Using their new understanding of how to do research and design questionnaires, the owners decided to use an experience intercept research design (randomly stopping customers as they were leaving the Santa Fe Grill), with trained interviewers to qualify the respondents using a set of three screening questions (see Exhibit 13.16), and a 35-question, self-administered survey to actually collect the needed data. Several followup questions the interviewers were to ask are also shown. In addition, the following six research objectives were used to guide the design of their survey instrument shown in Exhibit 13.16.

Research Objectives

1. To identify the factors people deem important in making casual dining restaurant choice decisions.
2. To determine the characteristics that customers use to describe the Santa Fe Grill Mexican Restaurant.
3. To develop a psychographic/demographic profile of Santa Fe Grill's customer base.
4. To determine the patronage and positive word of mouth advertising patterns toward the Santa Fe Grill Mexican Restaurant.
5. To assess the likelihood of the customer's willingness to return to the Santa Fe Grill in the future.
6. To assess the degree to which the customer is satisfied with their Santa Fe Grill restaurant experience.

Below are the screening and follow-up questions asked and completed by the interviewer for each respondent.

Hello. My name is ____ and I work for DSS Research. We are talking to individuals today/tonight about dining out habits.

"Do you regularly eat out at casual dining restaurants?" Yes No

"Have you eaten at other Mexican restaurants in the last six months?" Yes No

"Is your gross annual household income \$15,000 or more?" Yes No

If respondent answers 'Yes' to all three questions, then say:

We would like you to answer a few questions about your experience today/tonight at the Santa Fe Grill restaurant, and we hope you will be willing to give us your opinions. The survey will only take a few minutes and it will be very helpful to management in better serving its customers.

If the person says yes, give them a clipboard with the questionnaire on it, briefly explain the questionnaire, and show them where to complete the survey.

When the respondent returns the questionnaire, check it for completeness and if there are missing items try to get the individual to complete them.

Look closely at the answers to questions 22, 23, and 24. If the respondent answers 1, 2, or 3 ask the following questions.

You indicated you are not too satisfied with the Santa Fe Grill. Could you please tell me why?

Record answer here:

You indicated you are not likely to return to the Santa Fe Grill. Could you please tell me why?

Record answer here:

You indicated you are not likely to recommend the Santa Fe Grill. Could you please tell me why?

Record answer here:

Could I please have your name and phone number for verification purposes?

Name

Phone #

I hereby attest that this is a true and honest interview and complete to the best of my knowledge. I guarantee that all information relating to this interview shall be kept strictly confidential.

Interviewer's Signature

Date and Time completed

The following is the actual survey completed by respondents.

DINING OUT SURVEY

Please read all questions carefully. If you do not understand a question, ask the interviewer to help you. In the first section a number of statements are given about interests and opinions. Using a scale from

continued

1 to 7, with 7 being "Strongly Agree" and 1 being "Strongly Disagree," please indicate the extent to which you agree or disagree a particular statement describes you. Circle only one number for each statement.

Section 1: Life Style Questions

- | | | | | | | | | | |
|---|----------------------|---|---|---|---|---|---|---|-------------------|
| 1. I often try new and different things. | Strongly
Disagree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Strongly
Agree |
| 2. I like parties with music and lots of talk. | Strongly
Disagree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Strongly
Agree |
| 3. People come to me more often than I go to them for information about products. | Strongly
Disagree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Strongly
Agree |
| 4. I try to avoid fried foods. | Strongly
Disagree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Strongly
Agree |
| 5. I like to go out and socialize with people. | Strongly
Disagree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Strongly
Agree |
| 6. Friends and neighbors often come to me for advice about products and brands. | Strongly
Disagree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Strongly
Agree |
| 7. I am self-confident about myself and my future. | Strongly
Disagree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Strongly
Agree |
| 8. I usually eat balanced, nutritious meals. | Strongly
Disagree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Strongly
Agree |
| 9. When I see a new product in stores, I often buy it. | Strongly
Disagree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Strongly
Agree |
| 10. I am careful about what I eat. | Strongly
Disagree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Strongly
Agree |
| 11. I often try new brands before my friends and neighbors do. | Strongly
Disagree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Strongly
Agree |

Section 2: Perceptions Measures

Listed below is a set of characteristics that could be used to describe the Santa Fe Grill Mexican Restaurant. Using a scale from 1 to 7, with 7 being "Strongly Agree" and 1 being "Strongly Disagree," to what extent do you agree or disagree the Santa Fe Grill:

- | | | | | | | | | | |
|----------------------------|----------------------|---|---|---|---|---|---|---|-------------------|
| 12. Has friendly employees | Strongly
Disagree | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Strongly
Agree |
|----------------------------|----------------------|---|---|---|---|---|---|---|-------------------|

13. Is a fun place to eat	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree
14. Has large size portions	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree
15. Has fresh food	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree
16. Has reasonable prices	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree
17. Has an attractive interior	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree
18. Has excellent food taste	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree
19. Has knowledgeable employees	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree
20. Serves food at the proper temperature	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree
21. Has quick service	Strongly Disagree	1	2	3	4	5	6	7	Strongly Agree

Section 3: Relationship Measures

Please indicate your view on each of the following questions:

- | | | | | | | | | | |
|--|----------------------------------|---|---|---|---|---|---|---|------------------------------|
| 22. How satisfied are you with the Santa Fe Grill? | Not Satisfied
At All | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Very
Satisfied |
| 23. How likely are you to return to the Santa Fe Grill
in the future? | Definitely Will
Not Return | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Definitely Will
Return |
| 24. How likely are you to recommend the Santa Fe Grill
to a friend? | Definitely Will
Not Recommend | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Definitely Will
Recommend |
| 25. How often do you patronize the Santa Fe Grill? | | | | | | | | | |

1 = Occasionally (Less than once a month)

2 = Frequently (1-3 times a month)

3 = Very Frequently (4 or more times a month)

Section 4: Selection Factors

Listed below are some factors (reasons) many people use in selecting a restaurant where they want to dine. Think about your visits to casual dining restaurants in the last three months and please rank each

continued

attribute from 1 to 4, with 1 being the most important reason for selecting the restaurant and 4 being the least important reason. There can be no ties so make sure you rank each attribute with a different number.

Attributes	Ranking
26. Prices	
27. Food Quality	
28. Atmosphere	
29. Service	

Section 5: Classification Questions

Please circle the number that classifies you best.

30. Distance Driven
- 1 Less than 1 mile
 - 2 1-3 miles
 - 3 More than 3 Miles
31. Do you recall seeing any advertisements in the last 60 days for the Santa Fe Grill?
- 0 No
 - 1 Yes
32. Your Gender
- 0 Male
 - 1 Female
33. Number of Children at Home
- 1 None
 - 2 1-2
 - 3 More than 2 children at home
34. Your Age in Years
- 1 18-25
 - 2 26-34
 - 3 35-49
 - 4 50-59
 - 5 60 and Older
35. Your Annual Gross Household Income
- 1 \$15,000-\$30,000
 - 2 \$30,001-\$50,000
 - 3 \$50,001-\$75,000
 - 4 \$75,001-\$100,000
 - 5 More than \$100,000

Thank you very much for your help. Please return your completed questionnaire to the interviewer.

appendix 1.B

Using SPSS with the Santa Fe Grill Database

The SPSS software package is very user-friendly and enables you to easily learn the various statistical techniques without having to use formulas and calculate the results. The approach is a simple Windows-based “point-and-click” process. In this appendix, we provide a brief overview of how to use the package and click-through sequences for the techniques you will be using. This will be a quick reference point for you to refresh your memory on how to run the various techniques.

When you run the SPSS software, you will see a screen like that in Exhibit B.1. The case study database is available from our Web site at www.mhhe.com/hair/06 or from your instructor. You will note the columns are blank because the data has not been entered into the SPSS software.

When you load SPSS a screen in the top left-hand corner labeled Untitled—SPSS Data Editor should be visible in the background. In the foreground is a dialog box called SPSS for Windows Student Version. If you have never run SPSS you will have to tell the program where to find the data. If you have previously run the SPSS program you can simply highlight the location of the database and click on OK at the bottom of the screen. The SPSS Data Editor screen without the dialog box in the foreground is shown in Exhibit B.1.

Across the top of the screen is a toolbar with a series of pull-down menus. Each of these menus leads you to several functions. An overview of these menu functions is shown below.

Menus

There are 10 “pull-down” menus across the top of the screen. You can access most SPSS functions and commands by making selections from the menus on the main menu bar. Below are the major features accessed from each of the menus on the Student Version 12 of the SPSS software.

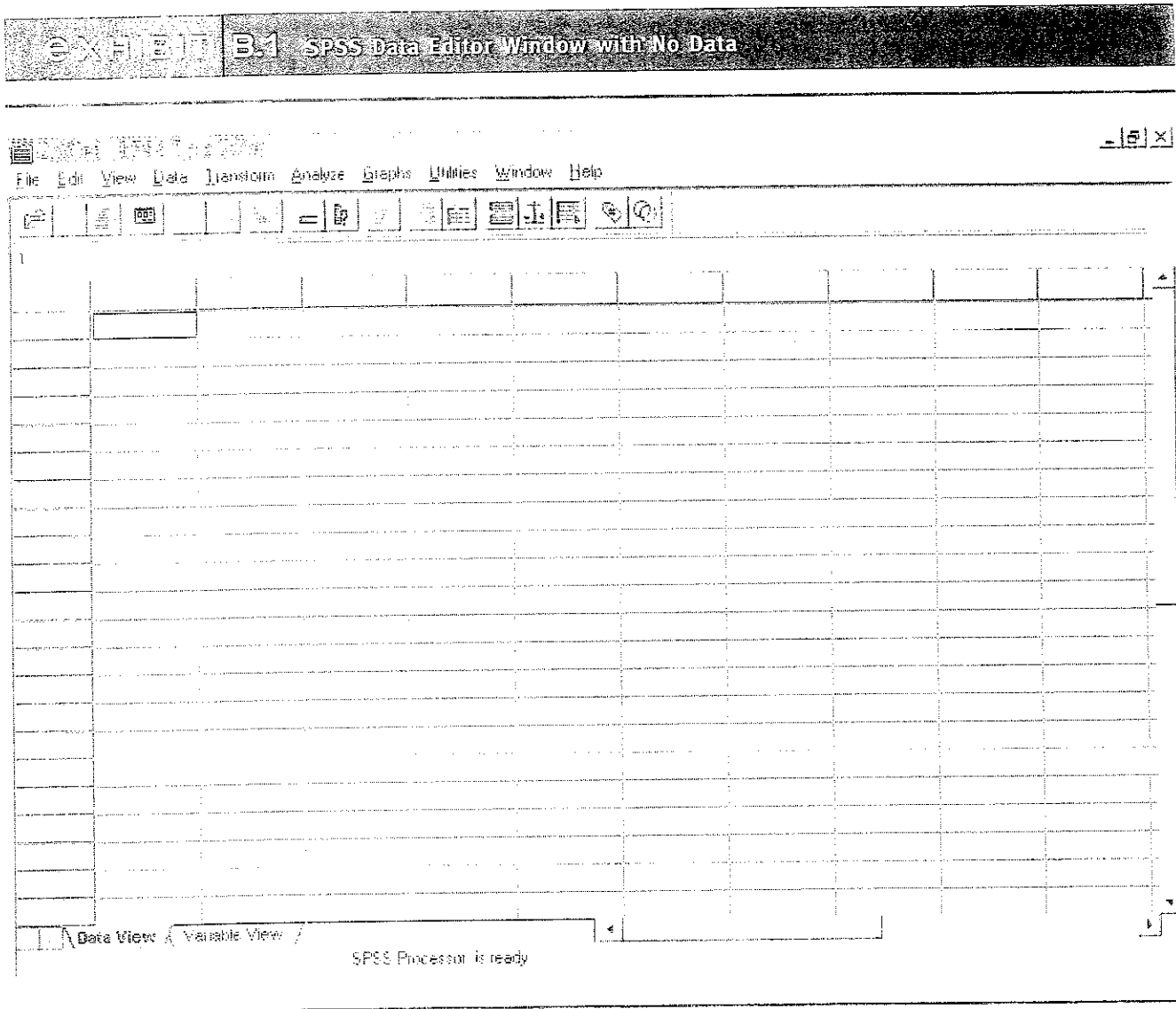
File = create new SPSS files; open existing files; save a file; print; and exit.

Edit = cut and/or copy text or graphics; find specific data; change default options such as size or type of font, fill patterns for charts, types of tables, display format for numerical variables, and so forth.

View = modify what and how information is displayed in the window.

Data = make changes to SPSS data files; add variables and/or cases; change the order of the respondents; split your data file for analysis; and select specific respondents for analysis by themselves.

Transform = compute changes or combinations of data variables; create new variables from combinations of other variables; create random seed numbers; count



occurrences of values within cases; recode existing variables; create categories for existing variables; replace missing variables; and so on.

Analyze = prepare reports; execute selected statistical techniques such as frequencies, correlation and regression, factor, cluster, and so on.

Graphs = prepare graphs and charts of data, such as bar, line, and pie charts; also boxplots, scatter diagrams, and histograms.

Utilities = information about variables such as missing values, column width, measurement level, and so on.

Window = minimize windows or move between windows.

Help = a brief tutorial of how to use SPSS; includes a link to the SPSS home page at www.spss.com.

Entering Data

There are two ways you can enter data into SPSS files. One is to enter data directly into the Data Editor window. This can be done by creating an entirely new file or by bringing data in from another software package such as Excel. The other is to load data from a file that has been created in another SPSS application.

Let's begin with explaining how to enter data directly into the Data Editor window. The process is similar to entering data into a spreadsheet. The first column typically is used to enter a respondent ID. Use this to enter a respondent number for each response. The remaining columns are used to enter data. You can also "cut and paste" data from another application. Simply open the Data Editor window and minimize it. Then go to your other application and copy the file, return to the Data Editor window and paste the data in it, making sure you correctly align the columns for each of the variables.

Now let's talk about how to load a previously created SPSS file, such as the one that comes with your text. Load the SPSS software and you should see an Untitled SPSS Data Editor screen. Click on the Open File icon and you will get an Open File dialog box. Click on "Look in" to indicate where to look for your file. For example, look on your CD or other storage device. This will locate your SPSS files and you should click on the Santa Fe Grill survey. This will load up your file and you will be ready to run your SPSS analysis.

Data View

When you load up your SPSS file it will show the Data View screen. Exhibit B.2 shows the Data View screen for the Santa Fe Grill survey. This screen is used to run data analysis and to build data files. The other view of the Data Editor is Variable View. The Variable View shows you information about the variables. To move between the two views go to the bottom left-hand corner of the screen and click on the view you want. We discuss the Variable View screen in the next section.

The survey database is set up in columns. The first column on the far left labeled "id" is a unique number for each of the 400 respondents in your database. The remaining columns are the data from the interviews conducted at the restaurant. In the first 3 columns to the right of the id you have the values for the three screening questions. Then, you have the first six variables of the survey—the lifestyle variables (X_1 – X_6). For example, respondent 1 gave the Santa Fe Grill a "6" on the 7-point scale for the first variable (X_1). Similarly, that same respondent rated the restaurant a "4" on the second variable (X_2) and a "5" on the third one (X_3). Exhibit B.2 shows only the id, the three screening variables, and the first six variables of the survey. But on your SPSS screen if you scroll to the right you will see the data for all of the survey variables.

Variable View

Exhibit B.3 shows the Variable View screen for the Santa Fe Grill survey. In this view the variable names appear in the far left-hand column. Then each of the columns defines various attributes of the variables as described below:

Name = This is an abbreviated name for each variable.

Type = The default for this is numeric with 2 decimal places. This can be changed to express values as whole numbers or it can do other things such as specify the values as

EXHIBIT B.2 Data View of the Santa Fe Grill Database

SPSS Processor is ready

	id	x_s1	x_s2	x_s3	y1	y2	y3	y4	y5	y6
1	1	1	1	1	6	4	5	3	4	5
2	2	1	1	1	4	3	4	2	4	4
3	3	1	1	1	3	4	7	3	4	7
4	4	1	1	1	6	5	7	4	4	7
5	5	1	1	1	4	4	5	2	4	5
6	6	1	1	1	4	6	7	2	4	7
7	7	1	1	1	5	4	5	3	2	5
8	8	1	1	1	6	4	6	4	4	6
9	9	1	1	1	6	5	6	2	5	5
10	10	1	1	1	5	5	6	3	4	6
11	11	1	1	1	4	4	5	3	5	5
12	12	1	1	1	6	3	4	4	5	4
13	13	1	1	1	5	2	3	4	4	3
14	14	1	1	1	6	5	7	3	5	7
15	15	1	1	1	6	3	4	4	2	4
16	16	1	1	1	6	5	7	4	4	6
17	17	1	1	1	5	5	7	4	4	7
18	18	1	1	1	6	5	6	4	4	5
19	19	1	1	1	4	2	3	3	3	3
20	20	1	1	1	6	4	5	3	5	5
21	21	1	1	1	5	4	6	4	3	6
22	22	1	1	1	5	2	3	4	3	3
23	23	1	1	1	6	6	7	4	5	7
24	24	1	1	1	4	5	7	4	4	6
25	25	1	1	1	5	3	3	3	4	3
26	26	1	1	1	6	5	6	2	2	6
27	27	1	1	1	6	3	4	4	5	4
28	28	1	1	1	6	5	4	2	4	4
29	29	1	1	1	6	5	7	4	3	7
30	30	1	1	1	4	2	3	3	4	3
31	31	1	1	1	6	5	7	3	2	6

dates, dollar, custom currency, and so forth. To view the options click first on the Numeric cell and then on the three shaded dots to the right of the cell.

Label = In this column you give a more descriptive title to your variable. For example, with the Santa Fe Grill survey variable X_1 is labeled as X_1 —Try New and Different Things and variable X_2 is labeled as X_2 —Party Person. When you have longer labels and want to be able to see all of them you can go to the top of the file and click between the Label and Values cells and make the column wider.

Values = In the values column you can assign a label for each of the values of a variable. For example, with the Santa Fe Grill survey data variable X_1 —Try New and Different Things we have indicated that a 1 = Strongly Disagree and a 7 = Strongly Agree. To view the options click first on the Values cell and then on the three shaded dots to the right of the cell. You can add new labels or change existing ones.

EXHIBIT B.3 Variable View of the Santa Fe Grill Survey Data

	Name	Type	Width	Decimals	Label	Values	Missing
1	id	Numeric	4	0	ID	None	None
2	x_s1	Numeric	4	0	Regularly Dine at Casual Dining Restaurants	None	None
3	x_s2	Numeric	4	0	Have Dined at Other Mexican Restaurants In last 6	None	None
4	x_s3	Numeric	4	0	Gross Annual Income \$15,000 or More	None	None
5	x1	Numeric	4	0	X1 -- Try New And Different Things	{1, Strongly Disagree}...	None
6	x2	Numeric	4	0	X2 -- Party Person	{1, Strongly Disagree}...	None
7	x3	Numeric	4	0	X3 -- People Come to Me	{1, Strongly Disagree}...	None
8	x4	Numeric	4	0	X4 -- Avoid Fried Foods	{1, Strongly Disagree}...	None
9	x5	Numeric	4	0	X5 -- Likes to Go Out Socially	{1, Strongly Disagree}...	None
10	x6	Numeric	4	0	X6 -- Friends Come to Me	{1, Strongly Disagree}...	None
11	x7	Numeric	4	0	X7 -- Self-Confident	{1, Strongly Disagree}...	None
12	x8	Numeric	4	0	X8 -- Eat Balanced, Nutritious Meals	{1, Strongly Disagree}...	None
13	x9	Numeric	4	0	X9 -- Buy New Products	{1, Strongly Disagree}...	None
14	x10	Numeric	4	0	X10 -- Careful About What I Eat	{1, Strongly Disagree}...	None
15	x11	Numeric	4	0	X11 -- Try New Brands	{1, Strongly Disagree}...	None
16	x12	Numeric	4	0	X12 -- Friendly Employees	{1, Strongly Disagree}...	None
17	x13	Numeric	4	0	X13 -- Fun Place to Eat	{1, Strongly Disagree}...	None
18	x14	Numeric	4	0	X14 -- Large Size Portions	{1, Strongly Disagree}...	None
19	x15	Numeric	4	0	X15 -- Fresh Food	{1, Strongly Disagree}...	None
20	x16	Numeric	4	0	X16 -- Reasonable Prices	{1, Strongly Disagree}...	None
21	x17	Numeric	4	0	X17 -- Attractive Interior	{1, Strongly Disagree}...	None
22	x18	Numeric	4	0	X18 -- Excellent Food Taste	{1, Strongly Disagree}...	None
23	x19	Numeric	4	0	X19 -- Knowledgeable Employees	{1, Strongly Disagree}...	None
24	x20	Numeric	4	0	X20 -- Proper Food Temperature	{1, Strongly Disagree}...	None
25	x21	Numeric	4	0	X21 -- Speed of Service	{1, Strongly Disagree}...	None
26	x22	Numeric	4	0	X22 -- Satisfaction	{1, 1 = Not Satisfied At All}...	None
27	x23	Numeric	4	0	X23 -- Likely to Return	{1, Not Likely At All}...	None
28	x24	Numeric	4	0	X24 -- Likely to Recommend	{1, Definitely Will Not Recommend}...	None
29	x25	Numeric	4	0	X25 -- Frequency of Patronizing Santa Fe Grill	{1, Occasionally (less than once a month)}...	None
30	x26	Numeric	4	0	X26 -- Price	{1, Most Important}...	None
31	x27	Numeric	4	0	X27 -- Food Quality	{1, Most Important}...	None
32	x28	Numeric	4	0	X28 -- Atmosphere	{1, Most Important}...	None

Missing = Missing values are important in SPSS. If you do not handle them properly in your database it will cause you to get incorrect results. Use this column to indicate values that are assigned to missing data. A blank Numeric cell is designated as system-missing and a period (.) is placed in the cell. The default is no missing data but if you have missing data then you should use this column to tell the SPSS software what is missing. To do so, you can record one or more values that will be considered as missing data and will not be included in the data analysis. To use this option, click on the Missing cell and then on the three shaded dots to the right. You will get a dialog box that shows the default of no missing data. To indicate one or more values as missing click on Discrete missing values and place a value in one of the cells. You can record up to three separate values. The value most often used for missing data is a 9. If you want to specify a range of values click on this option and indicate the range to be considered as missing.

Column = Click on the Column cell to indicate the width of the column. The default is 8 spaces but it can be increased or decreased.

Align = The default for alignment is initially left, but you can change to either center or right alignment.

Let's look at the Variable View screen for the Santa Fe Grill database. It is shown in Exhibit B.3. To see the Variable View screen go to the bottom left-hand corner of the screen and click on "Variable View." The name of the variable will be in the first column, but if you look at the fifth column it will tell you more about the variable. For example, variable X_1 is "Try New and Different Things" while X_2 is "Party Person." All of the remaining variables have a similar description. Also, if you look under the Values column it will tell you how the variable is coded; for example, 1 = Strongly Disagree and 7 = Strongly Agree.

Running a Program

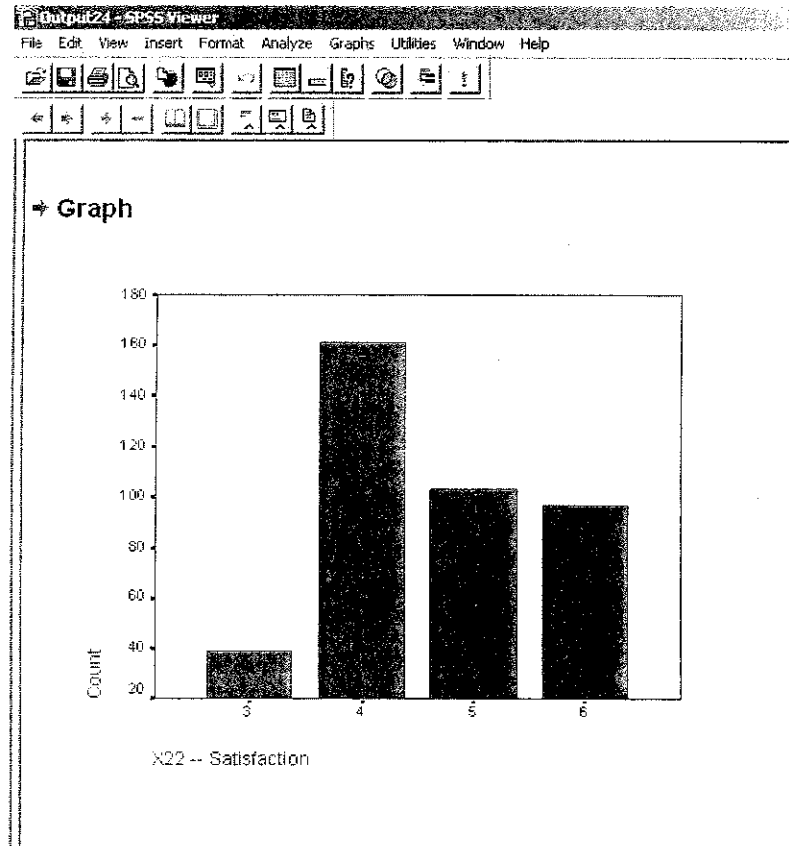
The two menus you will use most often are "Analyze" and "Graphs." Let's do a simple chart to show you how easy it is to use SPSS. Click on the "Graphs" pull-down menu first. When you do, select Bar and you will get a dialog box called Bar Charts. There are three options on the top left but for now use "Simple," which is the default (already checked). We also use the default in the "Data in Chart are:" box. This default tells the program to create a bar chart showing the count of the number of responses in each of the categories of the 7-point scale for this question. Now click Define and use the default = N of cases. Your database variables are shown in a window to the left of the screen. Highlight variable X_{22} —Satisfaction and then click on the "arrow button" to the left of the Category Axis box to move this variable into the box. Now click OK and you will get the bar chart shown in Exhibit B.4.

There are several things we can learn about this variable from the bar chart. First, the highest rating on the 7-point scale is a 6 and the lowest rating is a 3 (7 = Very Satisfied and 1 = Not Satisfied At All). Second, the rating given most often is a 5 and the one given least often is a 2. Recall the question for this variable read: "Please indicate your view on each of the following questions: How satisfied are you with the Santa Fe Grill?" Based on how the respondents answered this question, the bar chart tells us that overall the respondents are somewhat satisfied. We recommend you explore some of the other pull-down menus at this point and take the tutorial to begin familiarizing yourself with the SPSS software. As you go through the chapters we will give you the "Click-through" sequence for each of the problems we ask you to examine. But for a quick reference to the major procedures, we provide an alphabetic listing of these sequences in the following section. This will help you to easily apply and learn the statistical techniques that are most often used in analyzing data for business research reports and managerial decision making.

Click-Through Sequences for Selected Procedures

ANOVA

The click-through sequence is ANALYZE → GENERAL LINEAR MODEL → UNIVARIATE. Highlight the dependent variable X_{24} —Likely to Recommend by clicking on it and move it to the Dependent Variable box. Next, highlight X_{30} —Distance Driven and X_{32} —Gender, and move them to the Fixed Factors box. Click OK, since we don't need to specify any other options for this test.

EXHIBIT B.4 SPSS Bar Chart of Variable X₂₂—Satisfaction**Bar Charts**

The click-through sequence to prepare a bar chart for variable X₂₂—Satisfaction is: ANALYZE → DESCRIPTIVE STATISTICS → FREQUENCIES. Highlight X₂₂ and click on the arrow box to move it into the Variables box. Click on Charts and Bar Charts, and then Continue. Next click OK to execute the program.

Bivariate Regression

The click-through sequence for bivariate regression is ANALYZE → REGRESSION → LINEAR. Click on X₂₂—Satisfaction and move it to the Dependent Variable box. Click on X₁₆—Reasonable Prices and move it to the Independent Variables box. We will use the defaults for the other options, so click OK to run the bivariate regression.

Compare Means

The click-through sequence is ANALYZE → COMPARE MEANS → MEANS. Highlight the dependent variable X₂₄—Likely to Recommend by clicking on it, and move it to the Dependent List box. Next, highlight X₃₀—Distance Driven and X₃₂—Gender, and move them to the Independent List. Then click OK.

Chi-Square

The click-through sequence for Chi-Square is ANALYZE → DESCRIPTIVE STATISTICS → CROSSTABS. Click on X_{30} —Distance Traveled for the Row variable and on X_{32} —Gender for the Column variable. Click on the Statistics button and the Chi-Square box, and then Continue. Next click on the Cells button and on Expected frequencies (Observed frequencies is usually already checked). Then click Continue and OK to execute the program.

Cluster Analysis

The SPSS click-through sequence is ANALYZE → CLASSIFY → HIERARCHICAL CLUSTER, which leads to a dialog box where you select variables X_{22} , X_{23} , and X_{24} . After you have put these variables into the Variables box, look at the other options below. Keep all the defaults that are shown on the dialog box. You should also use the defaults for the Statistics and Plots options below. Click on the Method box and select Ward's under the Cluster Method (you have to scroll to the bottom of the list), but use the default of squared euclidean distances under Measure. We do nothing with the Save option at this point, so you can click OK at the top of the dialog box to execute the cluster analysis.

Discriminant Analysis

The SPSS click-through sequence is ANALYZE → CLASSIFY → DISCRIMINANT, which leads to a dialog box where you select the variables (see Exhibit 17.19). The dependent, nonmetric variable is X_{31} and the independent, metric variables are X_{15} , X_{18} , and X_{20} . The first thing you do is transfer variable X_{31} to the Grouping Variable box at the top, and then click on the Define Range box just below it. You must tell the program what the minimum and maximum numbers are for the grouping variable. In this case the minimum is 0 = Do Not Recall Ads and the maximum is 1 = Recall Ads, so just put these numbers in and click on Continue. Next you must transfer the food perceptions variables into the Independents box (X_{15} , X_{18} , and X_{20}). Then click on the Statistics box at the bottom and check Means, Univariate ANOVAS, and Continue. The Method default is Enter, and we will use this. Now click on Classify and Compute from group sizes. We do not know if the sample sizes are equal, so we must check this option. You should also click Summary Table and then Continue. We do not use any options under Save, so click OK to run the program.

Discriminant Analysis with Cluster Analysis

The SPSS click-through sequence is ANALYZE → CLASSIFY → DISCRIMINANT, which leads to a dialog box where you select the variables. The dependent, nonmetric variable is clu2_1, and the independent, metric variables are X_4 , X_8 , and X_{10} . First transfer variable clu2_1 to the Grouping Variable box at the top, and then click on the Define Range box just below it. Insert the minimum and maximum numbers for the grouping variable. In this case the minimum is 1 = cluster one and the maximum is 2 = cluster two, so just put these numbers in and click on Continue. Next you must transfer the food perceptions variables into the Independents box (X_4 , X_8 , and X_{10}). Then click on the Statistics box at the bottom and check Means, Univariate ANOVAS, and Continue. The Method default is Enter, and we will use this. Now click on Classify and Compute from group sizes. We do not know if the sample sizes are equal, so we must check this option. You should also click Summary Table and then Continue. We do not use any options under Save, so click OK to run the program.

Factor Analysis

The SPSS click-through sequence is ANALYZE → DATA REDUCTION → FACTOR, which leads to a dialog box where you select variables X_{12} – X_{21} . After you have put these variables into the Variables box, look at the data analysis options below. First click on the

Descriptives box and unclick the Initial Solution box because we do not need it at this point. Now click Continue to return to the previous dialog box. Next go to the Extraction box. In this one you leave the default of principal components and unclick the unrotated factor solution under Display. We will keep the other defaults, so now click the Continue box. Next go to the Rotation box. The default is None. We want to rotate, so click on Varimax as your rotational choice and then Continue. Finally, go to the Options box and click Sorted by Size, and then change the Suppress Absolute Values from .10 to .30. These last choices eliminate unneeded information, thus making the solutions printout much easier to read. We do not need Scores at this point, so we can click on OK at the top of the dialog box to execute the factor analysis. Exhibit 17.6 shows examples of some of the dialog boxes for running this factor analysis.

Independent Samples t-test

The SPSS click-through sequence is ANALYZE → COMPARE MEANS → INDEPENDENT SAMPLES T-TEST. When you get to this dialog box click variable X_{22} —Satisfaction into the Test Variables box and variable X_{32} —Gender into the Grouping Variable box. For variable X_{32} you must define the range in the Define Groups box. Enter a 0 for Group 1 and a 1 for Group 2 (males were coded 0 in the database and females were coded 1) and then click Continue. For the Options we will use the defaults, so just click OK to execute the program.

Mean, Median, and Mode

The SPSS click-through sequence is ANALYZE → DESCRIPTIVE STATISTICS → FREQUENCIES. Let's use X_{25} —Frequency of Patronage of Santa Fe Grill as a variable to examine. Click on X_{25} to highlight it, and then on the arrow box for the Variables box to use in your analysis. Next open the Statistics box and click on Mean, Median, and Mode, and then Continue and OK. Recall that if you want to create charts, open the Charts box. Your choices are Bar, Pie, and Histograms. For the Format box we will use the defaults, so click on OK to execute the program.

Multiple Regression

The SPSS click-through sequence to examine this relationship is ANALYZE → REGRESSION → LINEAR. Highlight X_{22} and move it to the Dependent Variables box. Highlight X_{15} , X_{18} , and X_{20} and move them to the Independent Variables box. We will use the defaults for the other options so click OK to run the multiple regression.

Multiple Regression with Factor Analysis

The SPSS click-through sequence is ANALYZE → REGRESSION → LINEAR, which leads you to a dialog box where you select the variables. You should select X_{22} as the dependent and $fac1_1$, $fac2_1$, $fac3_1$, and $fac4_1$ as the independents. Now click on the Statistics button and check Descriptives. There are several additional types of analysis that can be selected, but at this point we will use the program defaults. Click OK at the top right of the dialog box to execute the regression.

Paired Samples t-test

The click-through sequence is ANALYZE → COMPARE MEANS → PAIRED SAMPLES T-TEST. When you get to this dialog box, highlight both X_{18} —Food Taste and X_{20} —Food Temperature, and then click on the arrow button to move them into the Paired Variables box. For the Options we will use the defaults, so just click OK to execute the program.

Pearson Correlation

The SPSS click-through sequence is ANALYZE → CORRELATE → BIVARIATE, which leads to a dialog box where you select the variables. Transfer variables X_{22} and X_{24} into the Variables box. Note that we will use all three default options shown below: Pearson correlation, two-tailed test of significance, and flag significant correlations. Next go to the Options box, and after it opens click on Means and Standard Deviations and then continue. Finally, when you click on OK at the top right of the dialog box it will execute the Pearson correlation.

Range, Standard Deviation, and Variance

The Santa Fe Grill database can be used with the SPSS software to calculate measures of dispersion, just as we did with the measures of central tendency. The SPSS click-through sequence is ANALYZE → DESCRIPTIVE STATISTICS → FREQUENCIES. Let's use X_{22} —Satisfaction as a variable to examine. Click on X_{22} to highlight it and then on the arrow box to move X_{22} to the Variables box. Next open the Statistics box, go to the Dispersion box in the lower-left-hand corner, and click on Standard deviation, Variance, Range, Minimum and Maximum, and then Continue. If you would like to create charts, then open the Charts box—your choices are Bar, Pie, and Histograms. For the Format box we will use the defaults, so click on OK to execute the program.

Sample Subgroups

To split the sample into groups, the click-through sequence is: DATA → SPLIT FILE. First click on the Data pull-down menu and scroll down and highlight and click on Split File. You will now see in the Split File dialog box where the default is Analyze all cases. Click on the Compare groups option, highlight the variable you want to split the groups with (e.g., X_{32} —Gender), and click on the arrow box to move it into the Groups Based on: box. Next click on OK and you will be analyzing the males versus females groups separately. That is, your output will have the results for males and females separately.

Spearman Rank Correlation

The SPSS click-through sequence is ANALYZE → CORRELATE → BIVARIATE, which leads to a dialog box where you select the variables. Transfer variables X_{27} and X_{29} into the Variables box. You will note that the Pearson correlation is the default along with the two-tailed test of significance, and flag significant correlations. "Unclick" the Pearson correlation and then click on Spearman. Then click on OK at the top right of the dialog box to execute the program.

Summated Scores

The restaurant perceptions variables include three measures related to satisfaction. They are variables X_{22} , X_{23} , and X_{24} . To calculate the summated score, the click-through sequence is TRANSFORM → COMPUTE. First type a variable name in the Target Variable box. In this case we are calculating a summated score for the satisfaction variables so let's use the abbreviation Sum_Sat for Summated Satisfaction. Next click on the Numeric Expression box to move the cursor there. Look below at the buttons and click on the parenthesis to place it in the Numeric Expression box (make sure cursor is between parentheses). Now highlight variable X_{22} and click on the arrow box to move it into the parenthesis. Go to the buttons below and click on the plus (+) sign. Go back and highlight variable X_{23} and click on the arrow box to move it into the parenthesis. Again click on the plus (+) sign. Finally, go back and highlight variable X_{24} and click on the arrow box to move it into the parenthesis. Now put the cursor at the right end of the parentheses and click on the divide sign (/)

and then 3 to get the average. Next click on OK and you will get the average summated score for the three variables. You can find the new variable at the far right-hand side of your data editor screen.

Univariate Hypothesis Test

The click through sequence is ANALYZE → COMPARE MEANS → ONE SAMPLE T-TEST. When you get to the dialog box, click on X_{16} —Reasonable Prices to highlight it. Then click on the arrow to move X_{16} into the Test Variables box. In the box labeled Test Value, enter the number 4. This is the number you want to compare the respondents' answers against. Click on the Options box and enter 95 in the confidence interval box. This is the same as setting the significance level at .05. Then, click on the Continue button and OK to execute the program.