PRIMARY DATABASE

The primary database, consisting of 100 observations on 18 separate variables, is based on a market segmentation study of HBAT customers. HBAT sells paper products to two market segments: the newsprint industry and the magazine industry. Also, paper products are sold to these market segments either directly to the customer or indirectly through a broker. Two types of information were collected in the surveys. The first type of information was perceptions of HBAT's performance on 13 attributes. These attributes, developed through focus groups, a pretest, and use in previous studies, are considered to be the most influential in the selection of suppliers in the paper industry. Respondents included purchasing managers of firms buying from HBAT, and they rated HBAT on each of the 13 attributes using a 0–10 scale, with 10 being "Excellent" and 0 being "Poor." The second type of information relates to purchase outcomes and business relationships (e.g., satisfaction with HBAT and whether the firm would consider a strategic alliance/partnership with HBAT). A third type of information is available from HBAT's data warehouse and includes information such as size of customer and length of purchase relationship.

By analyzing the data, HBAT can develop a better understanding of both the characteristics of its customers and the relationships between their perceptions of HBAT, and their actions toward HBAT (e.g., satisfaction and likelihood to recommend). From this understanding of its customers, HBAT will be in a good position to develop its marketing plan for next year. Brief descriptions of the database variables are provided in Figure 1.8, in which the variables are classified as either independent or dependent, and either metric or nonmetric. Also, a complete listing and electronic copy of the database are available in the online resources at the text's websites. A definition of each variable and an explanation of its coding are provided in the following sections.

Figure 1.8
Description of Database Variables

Variable Description	Variable Type
Data Warehouse Classification Variables	
X_1 Customer Type	Nonmetric
X_2 Industry Type	Nonmetric
X_3 Firm Size	Nonmetric
X_4 Region	Nonmetric
X_5 Distribution System	Nonmetric
Performance Perceptions Variables	
X_6 Product Quality	Metric
X_7 E-Commerce Activities/Website	Metric
X_8 Technical Support	Metric
X_9 Complaint Resolution	Metric
X_{10} Advertising	Metric
X_{11} Product Line	Metric
X_{12} Salesforce Image	Metric
X_{13} Competitive Pricing	Metric
X_{14} Warranty and Claims	Metric
X_{15} New Products	Metric
X_{16} Ordering and Billing	Metric
X_{17} Price Flexibility	Metric
X_{18} Delivery Speed	Metric
Outcome/Relationship Measures	
X_{19} Satisfaction	Metric
X_{20} Likelihood of Recommendation	Metric
X_{21} Likelihood of Future Purchase	Metric
X_{22} Current Purchase/Usage Level	Metric
X_{23} Consider Strategic Alliance/Partnership in Future	Nonmetric

Data Warehouse Classification Variables As respondents were selected for the sample to be used by the marketing research firm, five variables also were extracted from HBAT's data warehouse to reflect the basic firm characteristics and their business relationship with HBAT. The five variables are as follows:

X_1	Customer Type	Length of time a particular customer has been buying from HBAT:
		1 = less than 1 year
		2 = between 1 and 5 years
		3 = longer than 5 years
X_2	Industry Type	Type of industry that purchases HBAT's paper products:
		0 = magazine industry
		1 = newsprint industry
X_3	Firm Size	Employee size:
		0 = small firm, fewer than 500 employees
		1 = large firm, 500 or more employees
X_4	Region	Customer location:
		0 = USA/North America
		1 = outside North America
X_5	Distribution System	How paper products are sold to customers:
		0 = sold indirectly through a broker
		1 = sold directly

Perceptions of HBAT Each respondent's perceptions of HBAT on a set of business functions were measured on a graphic rating scale, where a 10-centimeter line was drawn between the endpoints, labeled "Poor" and "Excellent," shown here.

As part of the survey, respondents indicated their perceptions by making a mark anywhere on the line. The location of the mark was electronically observed and the distance from 0 (in centimeters) was recorded in the database for that particular survey. The result was a scale ranging from 0 to 10, rounded to a single decimal place. The 13 HBAT attributes rated by each respondent were as follows:

X_6	Product Quality	Perceived level of quality of HBAT's paper products
X_7	E-Commerce Activities/ Website	Overall image of HBAT's website, especially user-friendliness
X_8	Technical Support	Extent to which technical support is offered to help solve product/service issues
X_9	Complaint Resolution	Extent to which any complaints are resolved in a timely and complete manner
X_{10}	Advertising	Perceptions of HBAT's advertising campaigns in all types of media
X_{11}	Product Line	Depth and breadth of HBAT's product line to meet customer needs
X_{12}	Salesforce Image	Overall image of HBAT's salesforce
X_{13}	Competitive Pricing	Extent to which HBAT offers competitive prices
X_{14}	Warranty and Claims	Extent to which HBAT stands behind its product/ service warranties and claims

X_{15}	New Products	Extent to which HBAT develops and sells new products
X_{16}	Ordering and Billing	Perception that ordering and billing is handled efficiently and correctly
X_{17}	Price Flexibility	Perceived willingness of HBAT sales reps to negotiate price on purchases of paper products
X_{18}	Delivery Speed	Amount of time it takes to deliver the paper products once an order has been confirmed

Purchase Outcomes Five specific measures were obtained that reflected the outcomes of the respondent's purchase relationships with HBAT. These measures include the following:

X_{19}	Customer Satisfaction	Customer satisfaction with past purchases from HBAT, measured on a 10-point graphic rating scale
X_{20}	Likelihood of Recommending HBAT	Likelihood of recommending HBAT to other firms as a supplier of paper products, measured on a 10-point graphic rating scale
X_{21}	Likelihood of Future Purchases from HBAT	Likelihood of purchasing paper products from HBAT in the future, measured on a 10-point graphic rating scale
X_{22}	Percentage of Purchases from HBAT	Percentage of the responding firm's paper needs purchased from HBAT, measured on a 100-point percentage scale
X_{23}	Perception of Future Relationship with HBAT	Extent to which the customer/respondent perceives his or her firm would engage in strategic alliance/partnership with HBAT:
		0 = Would not consider
		1 = Yes, would consider strategic alliance or partnership

OTHER DATABASES

Several other specialized databases are used in the text. First, Chapter 6 uses an expanded version of the HBAT database containing 200 respondents (HBAT200) that provides sufficient sample sizes for more complex MANOVA analyses. Chapter 2 uses a smaller database (HATMISS) to illustrate the handling of missing data. The SEM chapters (9, 10, 11, 12, 13) use different databases that meet the unique data requirements for those techniques. In each instance, the database is described more fully in those chapters. All of the databases used in the text are available in the online resources at the text's websites.

Organization of the Remaining Chapters

The remaining chapters of the text are organized into five sections, each addressing a separate stage in performing a multivariate analysis.

SECTION I: PREPARING FOR A MULTIVARIATE ANALYSIS

The initial section addresses issues that must be resolved before a multivariate analysis can be performed. Chapter 2 provides a number of methods for addressing a wide range of issues encountered in the dataset, including accommodating missing data, assurance of meeting the underlying statistical assumptions, identifying