<table>
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<tr>
<th><strong>Exploratory Research</strong></th>
<th><strong>Descriptive Research</strong></th>
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<tr>
<td><strong>Uses</strong></td>
<td></td>
</tr>
<tr>
<td>• Formulate a problem or define a problem more precisely</td>
<td>• To describe the characteristics of relevant groups, such as consumers, salespeople, organizations, or market areas</td>
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<tr>
<td>• Identify alternative courses of action</td>
<td>• To estimate the percentage of units in a specified population exhibiting a certain behavior</td>
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<tr>
<td>• Develop hypotheses</td>
<td>• To determine the perceptions of product characteristics</td>
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<tr>
<td>• Isolate key variables and relationships for further examination</td>
<td>• To determine the degree to which marketing variables are associated</td>
</tr>
<tr>
<td>• Gain insights for developing an approach to the problem</td>
<td>• To make specific predictions</td>
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<tr>
<td>• Establish priorities for further research</td>
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<tr>
<td><strong>Methods</strong></td>
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<tr>
<td>• Survey of experts</td>
<td>• Secondary data analyzed in a qualitative, as opposed to a qualitative, manner</td>
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<td>• Pilot surveys</td>
<td>• Surveys</td>
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<td>• Secondary data analyzed in qualitative way</td>
<td>• Panels</td>
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<td>• Qualitative Research</td>
<td>• Observational and other data</td>
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**Cross-Sectional Designs**

- Involve the collection of information from any given sample of population elements only once

- In **single cross-sectional designs**, there is only one sample of respondents and information is obtained from this sample only once.

- In **multiple cross-sectional designs**, there are two or more samples of respondents, and information from each sample is obtained only once. Often, information from different samples is obtained at different times.

- **Cohort analysis** consists of a series of surveys conducted at appropriate time intervals, where the cohort serves as the basic unit of analysis. A cohort is a group of respondents who experience the same event within the same time interval.
Formulate an appropriate research design (for example, by identifying the key variables)

Answer certain research questions and test some hypotheses

Interpret primary data more insightfully

**Criteria for Evaluating Secondary Data**

- **Specifications**: Methodology Used to Collect the Data
- **Error**: Accuracy of the Data
- **Currency**: When the Data Were Collected
- **Objective(s)**: The Purpose for Which the Data Were Collected
- **Nature**: The Content of the Data
- **Dependability**: Overall, How Dependable Are the Data

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Issues</th>
<th>Remarks</th>
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<tbody>
<tr>
<td><strong>Specifications &amp; Methodology</strong></td>
<td>Data collection method, response rate, quality &amp; analysis of data, sampling technique &amp; size, questionnaire design, fieldwork.</td>
<td>Data should be reliable, valid, &amp; generalizable to the problem.</td>
</tr>
<tr>
<td><strong>Error &amp; Accuracy</strong></td>
<td>Examine errors in approach, research design, sampling, data collection &amp; analysis, &amp; reporting.</td>
<td>Assess accuracy by comparing data from different sources.</td>
</tr>
<tr>
<td><strong>Currency</strong></td>
<td>Time lag between collection &amp; publication, frequency of updates. Why were the data collected?</td>
<td>Census data are updated by syndicated firms. The objective determines the relevance of data. Reconfigure the data to increase their usefulness.</td>
</tr>
<tr>
<td><strong>Objective</strong></td>
<td>Definition of key variables, units of measurement, categories used, relationships examined.</td>
<td></td>
</tr>
<tr>
<td><strong>Nature</strong></td>
<td>Expertise, credibility, reputation, &amp; trustworthiness of the source.</td>
<td>Data should be obtained from an original source.</td>
</tr>
</tbody>
</table>
One of the first sources a researcher should consult

Directories

- Helpful for identifying individuals or organizations that collect specific data

Indices

- Helpful in locating information on a particular topic in several different publications

A Classification of Computerized Databases

- **Bibliographic databases** are composed of citations to articles.
- **Numeric databases** contain numerical and statistical information.
- **Full-text databases** contain the complete text of the source documents comprising the database.
- **Directory databases** provide information on individuals, organizations, and services.
- **Special-purpose databases** provide specialized information.
<table>
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<tr>
<th>Purchase Panels</th>
<th>Households provide specific information regularly over an extended period of time; respondent asked to record specific behaviors as they occur</th>
<th>Recorded purchase behavior can be linked to the demographic/psychographic characteristics</th>
<th>Lack of representativeness; response bias; maturation</th>
<th>Forecasting sales, market share and trends; establishing consumer profiles, brand loyalty and switching; evaluating test markets, advertising, and distribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Media Panels</td>
<td>Electronic devices automatically recording behavior, supplemented by a diary</td>
<td>Same as purchase panel</td>
<td>Same as purchase panel</td>
<td>Establishing advertising rates; selecting media program or air time; establishing viewer profiles</td>
</tr>
<tr>
<td>Scanner Volume Tracking Data</td>
<td>Household purchases are recorded through electronic scanners in supermarkets</td>
<td>Data reflect actual purchases; timely data, less expensive</td>
<td>Data may not be representative; errors in recording purchases; difficult to link purchases to elements of marketing mix other than price</td>
<td>Price tracking, modeling, effectiveness of in-store promotions</td>
</tr>
<tr>
<td>Scanner Diary Panels with Cable TV</td>
<td>Scanner panels of households that subscribe to cable TV</td>
<td>Data reflect actual purchases; sample control; ability to link panel data to household characteristics</td>
<td>Data may not be representative; quality of data limited</td>
<td>Promotional mix analyses, copy testing, new product testing, positioning</td>
</tr>
</tbody>
</table>

**Single-Source Data**

- **Single-source** data provide integrated information on household variables, including media consumption and purchases, and marketing variables, such as product sales, price, advertising, promotion, and in-store marketing effort.
  - Recruit a test panel of households and meter each home’s TV sets.
  - Survey households periodically on what they read.
  - Grocery purchases are tracked by UPC scanners.
  - Track retail data, such as sales, advertising, and promotion.
Audit

- The researcher collects data by examining physical records or performing inventory analysis.
- Data are collected personally by the researcher.
- The data are based upon counts, usually of physical objects.
- Retail and wholesale audits conducted by marketing research suppliers were discussed in the context of syndicated data in Chapter 4

Content Analysis

- The objective, systematic, and quantitative description of the manifest content of a communication.
- The unit of analysis may be words, characters (individuals or objects), themes (propositions), space and time measures (length or duration of the message), or topics (subject of the message).
- Analytical categories for classifying the units are developed and the communication is broken down according to prescribed rules.

Trace Analysis

- Data collection is based on physical traces, or evidence, of past behavior.
  - The selective erosion of tiles in a museum indexed by the replacement rate was used to determine the relative popularity of exhibits.
  - The number of different fingerprints on a page was used to gauge the readership of various advertisements in a magazine.
  - The position of the radio dials in cars brought in for service was used to estimate share of listening audience of various radio stations.
  - The age and condition of cars in a parking lot were used to assess the affluence of customers.
  - The magazines people donated to charity were used to determine people’s favorite magazines.
♦ Ordinal Scale
  o A ranking scale in which numbers are assigned to objects to indicate the relative extent to which the objects possess some characteristic.
  o Can determine whether an object has more or less of a characteristic than some other object, but not how much more or less.
  o Any series of numbers can be assigned that preserves the ordered relationships between the objects.
  o In addition to the counting operation allowable for nominal scale data, ordinal scales permit the use of statistics based on centiles, e.g., percentile, quartile, median.

♦ Interval Scale
  o Numerically equal distances on the scale represent equal values in the characteristic being measured.
  o It permits comparison of the differences between objects.
  o The location of the zero point is not fixed. Both the zero point and the units of measurement are arbitrary.
  o Any positive linear transformation of the form \( y = a + bx \) will preserve the properties of the scale.
  o It is meaningful to take ratios of scale values.
  o Statistical techniques that may be used include all of those that can be applied to nominal and ordinal data, and in addition the arithmetic mean, standard deviation, and other statistics commonly used in marketing research.

♦ Ratio Scale
  o Possesses all the properties of the nominal, ordinal, and interval scales.
  o It has an absolute zero point.
  o It is meaningful to compute ratios of scale values.
  o Only proportionate transformations of the form \( y = bx \), where \( b \) is a positive constant, are allowed.
  o All statistical techniques can be applied to ratio data.
Finally, the variables should decrease the cost of the stratification process by being easy to measure and apply.

In proportionate stratified sampling, the size of the sample drawn from each stratum is proportionate to the relative size of that stratum in the total population.

In disproportionate stratified sampling, the size of the sample from each stratum is proportionate to the relative size of that stratum and to the standard deviation of the distribution of the characteristic of interest among all the elements in that stratum.

♦ Cluster Sampling

The target population is first divided into mutually exclusive and collectively exhaustive subpopulations, or clusters.

Then a random sample of clusters is selected, based on a probability sampling technique such as SRS.

For each selected cluster, either all the elements are included in the sample (one-stage) or a sample of elements is drawn probabilistically (two-stage).

Elements within a cluster should be as heterogeneous as possible, but clusters themselves should be as homogeneous as possible. Ideally, each cluster should be a small-scale representation of the population.

♦ In probability proportionate to size sampling, the clusters are sampled with probability proportional to size. In the second stage, the probability of selecting a sampling unit in a selected cluster varies inversely with the size of the cluster.