

Chapter 02

Descriptive Methods

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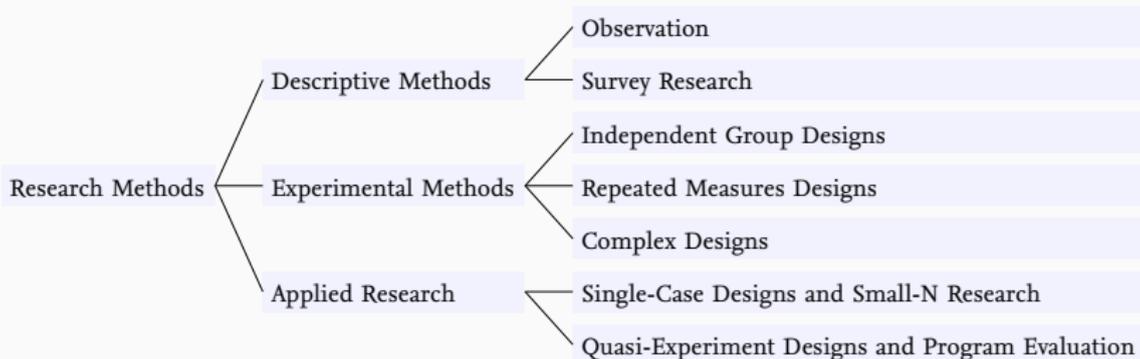
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Sampling Behavior

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- The extent to which observations may be generalized (external validity) (外部效度) depends on how behavior is sampled.
- Time, event, and situation sampling can be used to enhance the external validity of observational findings.

Time and event sampling

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- Intervals may be selected systematically (e.g., observing the first day of each week), randomly, or both.
- When researchers are interested in events that happen infrequently, they rely on event sampling to sample behavior.
- In **event sampling** (事件) the observer records each event that meets a predetermined definition.

Situation and subject sampling

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- **Situation sampling** (情境抽样) involves observing behavior in as many different locations and under as many different circumstances and conditions as possible.

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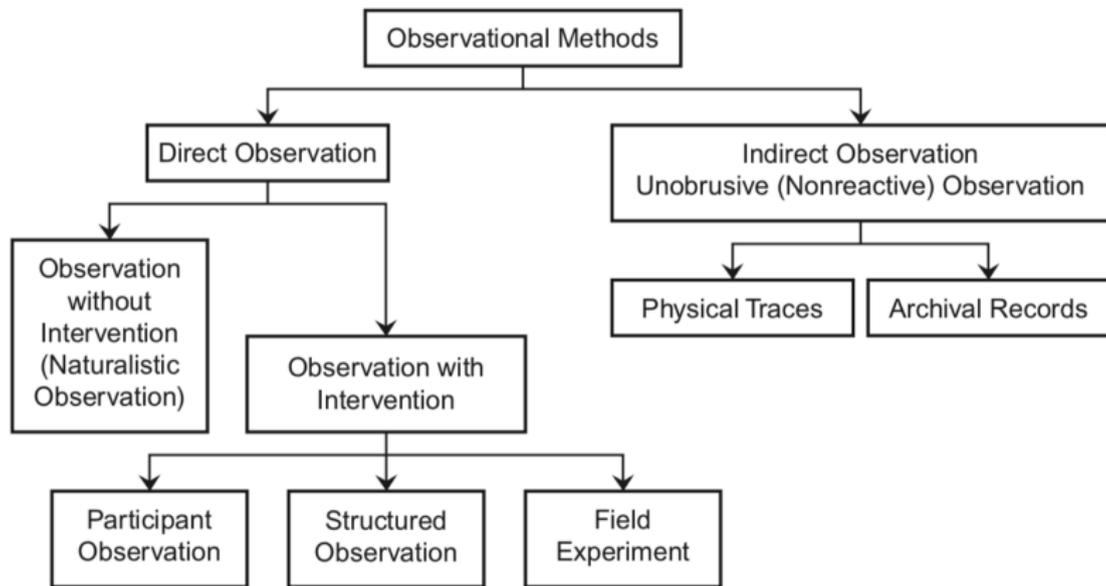
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- Situation sampling enhances the external validity of findings.
- Within situations, **subject sampling** (被试抽样) may be used to observe some people in the setting.

Observational Methods

Flow diagram of observational methods



(Kantowitz, Roediger, & Elmes, 2015, p. 97)

Observation without Intervention

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- The goals of naturalistic observation are to describe behavior as it normally occurs and to examine relationships among variables.
- Naturalistic observation helps to establish the external validity of laboratory findings.
- When ethical and moral considerations prevent experimental control, naturalistic observation is an important research strategy.

Observation with Intervention

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- The three methods of observation with intervention are participant observation, structured observation, and the field experiment.

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- In undisguised participant observation (非隐匿的被试观察), individuals who are being observed know that the observer is present for the purpose of collecting information about their behavior.
- In disguised participant observation (隐匿的被试观察), those who are being observed do not know that they are being observed.

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- If individuals change their behavior when they know they are being observed (“reactivity”), their behavior may no longer be representative of their normal behavior.

Structured Observation

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- In a **field experiment** (田野实验), researchers manipulate one or more independent variables in a natural setting to determine the effect on behavior.

Indirect observational methods

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- Indirect, or unobtrusive, observations can be obtained by examining **physical traces** (物理痕迹) and **archival records** (档案记录).

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- **Use traces** are what the label implies—the physical evidence that results from the use (or nonuse) of an item.
- **Products** are the creations, constructions, or other artifacts of behavior.

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- Other records, such as personal documents (e.g., birth certificates, marriage licenses), are more likely to describe specific events or episodes, and are referred to as episodic records.

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- Selective deposit occurs when some information is selected to be deposited in archives, but other information is not.
- Selective survival arises when records are missing or incomplete (something an investigator may not even be aware of).

Recording Behavior

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- How the results of a study are ultimately summarized, analyzed, and reported depends on how behavioral observations are initially recorded.

Comprehensive Records of Behavior

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- Researchers classify and organize data from narrative records to test their hypotheses about behavior.
- Narrative records should be made during or soon after behavior is observed, and observers must be carefully trained to record behavior according to established criteria.

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- Quantitative measures of behavior use one of four levels of measurement scales: nominal, ordinal, interval, and ratio.

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- Rating scales, often used to measure psychological dimensions, are frequently treated as if they are interval scales even though they usually represent ordinal measurement.
- Electronic recording devices may be used in natural settings to record behavior, and pagers sometimes are used to signal participants to report their behavior (e.g., on a questionnaire).

Potential Problems

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- Researchers must consider ethical issues when attempting to control reactivity.

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- The first step in controlling observer bias is to recognize that it may be present.
- Observer bias may be reduced by keeping observers unaware ("blind") of the goals and hypotheses of the study.

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- Surveys can be specific and limited in scope or more global in their goals.
- The best way to determine whether results of a survey are biased is to examine the survey procedures and analyses.

Characteristics of Surveys

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- Careful selection of a survey sample allows researchers to generalize findings from the sample to the population.

Sampling in Survey Research

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- The identification and selection of elements that will make up the sample is at the heart of all sampling techniques; the sample is chosen from the sampling frame, or list of all members of the population of interest.

Approaches to Sampling

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- **Nonprobability sampling** (不按比率抽样) (such as convenience sampling) does not guarantee that every element in the population has an equal chance of being included in the sample.
- **Probability sampling** (按比率抽样) is the method of choice for obtaining a representative sample.

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- In **simple random sampling** (简单随机抽样), each element of the population has an equal chance of being included in the sample;
- In **stratified random sampling** (分层随机抽样), the population is divided into subpopulations (strata), and random samples are drawn from the strata.

Survey Methods

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- Four methods for obtaining survey data are mail surveys, personal interviews, telephone interviews, and Internet surveys.

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- Due to problems with the response rate, the final sample for a mail survey may not represent the population.

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- Although costly, personal interviews allow researchers to gain more control over how the survey is administered.
- Interviewer bias occurs when survey responses are recorded inaccurately or when interviewers guide individuals' responses.

Telephone Interviews

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- Despite some disadvantages, telephone interviews are used frequently for brief surveys.

Internet Surveys

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- The Internet offers several advantages for survey research because it is an efficient, low-cost method for obtaining survey responses from large, potentially diverse and underrepresented samples.
- Disadvantages associated with Internet survey research include the potential for response rate bias and selection bias, and lack of control over the research environment.

Survey-Research Designs

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- The three types of survey design are the cross-sectional design, the successive independent samples design, and the longitudinal design.

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- In the **cross-sectional design** (横向研究), one or more samples are drawn from the population(s) at one time.
- Cross-sectional designs allow researchers to describe the characteristics of a population or the differences between two or more populations, and correlational findings from cross-sectional designs allow researchers to make predictions.

Successive Independent Samples Design

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- The successive independent samples design allows researchers to study changes in a population over time.
- The successive independent samples design does not allow researchers to infer how individual respondents have changed over time.
- A problem with the successive independent samples design occurs when the samples drawn from the population are not comparable—that is, not equally representative of the population.

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- In the **longitudinal design** (纵向研究), the same respondents are surveyed over time in order to examine changes in individual respondents.
- Because of the correlational nature of survey data, it is difficult to identify the causes of individuals' changes over time.
- As people drop out of the study over time (attrition), the final sample may no longer be comparable to the original sample or represent the population.

Questionnaires

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- Demographic variables describe the characteristics of people who are surveyed.
- The accuracy and precision of questionnaires requires expertise and care in their construction.
- Self-report scales are used to assess people's preferences or attitudes.

Reliability and Validity of Self-Report Measures

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- **Validity** (效度) refers to the truthfulness of a measure: Does it measure what it intends to measure?
- **Construct validity** (建构效度) represents the extent to which a measure assesses the theoretical construct it is designed to assess; construct validity is determined by assessing convergent validity and discriminant validity.

Constructing a Questionnaire

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- The order in which questions are asked on a questionnaire needs to be considered seriously because the order can affect respondents' answers.

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- Social desirability refers to pressure that respondents sometimes feel to respond as they “should” believe rather than how they actually believe.
- Researchers can assess the accuracy of survey responses by comparing these results with archival data or behavioral observations.

Correlation and Causality

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- When a relationship between two variables can be explained by a third variable, the relationship is said to be “spurious.”
- Correlational evidence, in combination with a multimethod approach, can help researchers identify potential causes of behavior.

References i

Kantowitz, B. H., Roediger, I., Henry L., & Elmes, D. G. (2015). *Experimental psychology* (10th ed.) [Book]. Stamford, CT: Cengage Learning.