

Glossary

- A priori codes**—codes that were developed before examining the current data
- A-B-A design**—a single-case experimental design in which the response to the experimental treatment condition is compared to baseline responses taken before and after administering the treatment condition
- A-B-A-B design**—an A-B-A design that is extended to include the reintroduction of the treatment condition
- Abstract**—a brief description of the essential characteristics of the study
- Accessible population**—the research participants who are available for participation in the research
- Achievement tests**—tests that are designed to measure the degree of learning that has taken place after a person has been exposed to a specific learning experience
- Acquiescence response set**—the tendency to either agree or to disagree
- Action research**—applied research focused on solving practitioners' local problems
- Active consent**—a process whereby consent is provided by signing a consent form
- Additive and interactive effects**—refers to the fact that the threats to internal validity can combine to produce an additive or multiplicative bias
- Alternative hypothesis**—statement that the population parameter is some value other than the value stated by the null hypothesis
- Ambiguous temporal precedence**—the inability to specify which variable is the cause and which is the effect
- Amount technique**—manipulating the independent variable by giving the various comparison groups different amounts of the independent variable
- Analysis of covariance**—a statistical method that can be used to statistically equate groups that differ on a pretest or some other variable; also called ANCOVA; used to examine the

relationship between one categorical independent variable and one quantitative dependent variable, controlling for one or more extraneous variables.

Anchor—a written descriptor for a point on a rating scale

Anonymity—keeping the identity of the participant from everyone, including the researcher

Applied research—research focused on answering practical questions to provide relatively immediate solutions

Aptitude tests—tests that focus on information acquired through the informal learning that goes on in life

Archived research data—data originally used for research purposes and then stored

Assent—agreeing to participate after being informed of all the features of the study that could affect the participant's willingness to participate

Assessment—gathering and integrating data to make educational evaluations

Attrition—loss of people who do not complete the experiment

Axial coding—the second stage in grounded theory data analysis

Backstage behavior—what people say and do only with their closest friends

Bar graph—a graph that uses vertical bars to represent the data

Basic research—research aimed at generating fundamental knowledge and theoretical understanding about basic human and other natural processes

Biased sample—a sample that is systematically different from the population

Boolean operators—words such as “and” and “or” that create logical combinations

Bracket—to suspend your preconceptions or learned feelings about a phenomenon

Carryover effect—a sequencing effect that occurs when performance in one treatment condition is influenced by participation in a prior treatment condition(s)

Case—a bounded system

Case study research—a form of qualitative research that is focused on providing a detailed account of one or more cases

Categorical variable—a variable that varies in type or kind

Causal description—describing the consequences of manipulating an independent variable

Causal explanation—explaining the mechanisms through which and the conditions under which a causal relationship holds

Causal modeling—a form of explanatory research in which the researcher hypothesizes a causal model and then empirically tests the model

Causal-comparative research—a form of nonexperimental research in which the primary independent variable of interest is a categorical variable

- Cause-and-effect relationship**—relationship in which one variable affects another variable
- Cell**—a combination of two or more independent variables in a factorial design
- Census**—a study of the whole population rather than a sample
- Changing-criterion design**—a single-case experimental design in which a participant's behavior is gradually altered by changing the criterion for success during successive treatment periods
- Checklist**—a list of response categories that respondents check if appropriate
- Chi-square test for contingency tables**—statistical test used to determine whether a relationship observed in a contingency table is statistically significant
- Closed-ended question**—a question that forces participants to choose from a set of predetermined responses
- Cluster**—a collective type of unit that includes multiple elements
- Cluster sampling**—type of sampling in which clusters are randomly selected
- Coding**—marking segments of data with symbols, descriptive words, or category names
- Coefficient alpha**—a formula that provides an estimate of the reliability of a homogeneous test or an estimate of the reliability of each dimension in a multidimensional test
- Cohort**—any group of people with a common classification or characteristic
- Collective case study**—studying multiple cases in one research study
- Commensurability mixing validity**—the degree to which a mixed researcher can make Gestalt switches between the lenses of a qualitative researcher and a quantitative researcher and integrate the two views into an integrated viewpoint
- Compatibility thesis**—the idea that quantitative and qualitative methods are compatible
- Complete observer**—researcher observes as an outsider and does not tell people they are being observed
- Complete participant**—researcher becomes member of group being studied and does not tell members they are being studied
- Comprehensive sampling**—including all cases in the research study
- Concurrent evidence**—validity evidence based on the relationship between test scores and criterion scores obtained at the same time
- Confidence interval**—a range of numbers inferred from the sample that has a certain probability or chance of including the population parameter
- Confidence limits**—the endpoints of a confidence interval
- Confidentiality**—not revealing the identity of the participant to anyone other than the researcher and his or her staff
- Confirmatory method**—a top-down or theory-*testing* approach to research

- Confounding variable**—a type of extraneous variable that if not controlled for will result in a “confounded” result
- Constant**—a single value or category of a variable
- Constant comparative method**—data analysis in grounded theory research
- Construct validity**—the extent to which a higher order construct is represented in a particular study
- Content-related evidence**—validity evidence based on a judgment of the degree to which the items, tasks, or questions on a test adequately represent the construct domain of interest
- Contextualization**—the identification of when and where an event took place
- Contingency question**—an item that directs participants to different follow-up questions depending on their response
- Contingency table**—a table displaying information in cells formed by the intersection of two or more categorical variables
- Control group**—the group that does not receive the experimental treatment condition
- Convenience sampling**—people who are available, volunteer, or can be easily recruited are included in the sample
- Convergent evidence**—validity evidence based on the relationship between the focal test scores and independent measures of the same construct
- Conversion validity**—the degree to which quantizing or qualitzing yields high-quality meta-inferences
- Co-occurring codes**—codes that overlap partially or completely
- Correlation coefficient**—a numerical index that indicates the strength and direction of the relationship between two variables
- Correlational research**—a form of nonexperimental research in which the primary independent variable of interest is a quantitative variable
- Corroboration**—comparing documents to each other to determine whether they provide the same information or reach the same conclusion
- Counterbalancing**—administering the experimental treatment conditions to all comparison groups but in a different order
- Criterion**—the standard or benchmark that you want to predict accurately on the basis of the test scores
- Criterion of falsifiability**—the property that statements and theories should be testable and refutable
- Criterion-related evidence**—validity evidence based on the extent to which scores from a test can be used to predict or infer performance on some criterion such as a test or future performance

- Critical-case sampling**—selecting what are believed to be particularly important cases
- Cross-case analysis**—searching for similarities and differences across multiple cases.
- Cross-sectional research**—data are collected at a single point in time
- Culture**—a system of shared beliefs, values, practices, perspectives, folk knowledge, language, norms, rituals, and material objects and artifacts that members of a group use in understanding their world and in relating to others
- Data set**—a set of data
- Data triangulation**—the use of multiple data sources
- Debriefing**—a poststudy interview in which all aspects of the study are revealed, any reasons for deception are explained, and any questions the participant has about the study are answered
- Deception**—misleading or withholding information from the research participant
- Deductive reasoning**—the process of drawing a conclusion that is necessarily true if the premises are true
- Dehoaxing**—informing study participants about any deception that was used and the reasons for its use
- Deontological approach**—an ethical approach that says ethical issues must be judged on the basis of some universal code
- Dependent variable**—a variable that is presumed to be influenced by one or more independent variables
- Description**—attempting to describe the characteristics of a phenomenon
- Descriptive research**—research focused on providing an accurate description or picture of the status or characteristics of a situation or phenomenon
- Descriptive statistics**—statistics that focus on describing, summarizing, or explaining data
- Descriptive validity**—the factual accuracy of an account as reported by the researcher
- Desensitizing**—helping study participants deal with and eliminate any stress or other undesirable feelings that the study might have created
- Design**—the section that presents the plan or strategy used to investigate the research question
- Determinism**—all events have causes
- Diagnostic tests**—tests that are designed to identify where a student is having difficulty with an academic skill
- Diagramming**—making a sketch, drawing, or outline to show how something works or to clarify the relationship between the parts of a whole
- Differential attrition**—a differential loss of participants from the various comparison groups that results in the groups being unequal on extraneous variables

- Differential influence**—when the influence of an extraneous variable is different for the various comparison groups
- Differential selection**—selecting participants for the various treatment groups who have different characteristics
- Direct effect**—the effect of the variable at the origin of an arrow on the variable at the receiving end of the arrow
- Directional alternative hypothesis**—an alternative hypothesis that contains either a greater than sign ($>$) or a less than sign ($<$)
- Discriminant evidence**—evidence that the scores on your focal test are *not* highly related to the scores from other tests that are designed to measure theoretically different constructs
- Disordinal interaction effect**—an interaction effect that occurs when the lines on a graph plotting the effect cross
- Disproportional stratified sampling**—a type of stratified sampling in which the sample proportions are made to be different from the population proportions on the stratification variable
- Double negative**—a sentence construction that includes two negatives
- Double-barreled question**—a question that combines two or more issues or attitude objects
- Ecological validity**—the ability to generalize the study results across settings
- Educational Resources Information Center (ERIC)**—a database containing information from CIJE and RIE
- Effect size indicator**—a measure of the strength or magnitude of a relationship between the independent and dependent variables
- Element**—the basic unit that is selected from the population
- Emic perspective**—the insider's perspective
- Emic terms**—special words or terms used by the people in a group
- Empirical statement**—a statement based on observation, experiment, or experience
- Empiricism**—the idea that knowledge comes from experience
- Enumeration**—the process of quantifying data
- Epistemology**—the theory of knowledge and its justification
- Equal probability selection method**—any sampling method in which each member has an equal probability of being selected
- Equivalent-forms reliability**—the consistency of a group of individuals' scores on two equivalent forms of a test measuring the same thing
- Error**—the difference between true scores and observed scores
- Essence**—an invariant structure of the experience

- Ethical skepticism**—an ethical approach that says concrete and inviolate moral codes cannot be formulated
- Ethics**—the principles and guidelines that help us uphold the things we value
- Ethnocentrism**—judging people from a different culture according to the standards of your own culture
- Ethnography**—a form of qualitative research focused on the discovery and comprehensive description of the culture of a group of people
- Ethnohistory**—the study of the cultural past of a group of people
- Ethnology**—the comparative study of cultural groups
- Etic perspective**—an external, social scientific view of reality
- Etic terms**—outsider's words or special words that are used by social scientists
- Evaluation**—determining the worth, merit, or quality of an evaluation object
- Event sampling**—observing only after specific events have occurred
- Exempt studies**—studies involving no risk to participants and not requiring full IRB review
- Exhaustive**—the property that a set of response categories or intervals covers the complete range of possible responses
- Exhaustive categories**—a set of categories that classify all of the relevant cases in the data
- Expedited review**—a process by which a study is rapidly reviewed by fewer members than constitute the full IRB board
- Experiment**—an environment in which the researcher objectively observes phenomena that are made to occur in a strictly controlled situation in which one or more variables are varied and the others are kept constant
- Experimental control**—eliminating any differential influence of extraneous variables
- Experimental group**—the group that receives the experimental treatment condition
- Experimental reliability**—the consistency, stability, or repeatability of the results of a study
- Experimental research**—research in which the researcher manipulates the independent variable and is interested in showing cause and effect
- Experimental validity**—the correctness or truthfulness of an inference that is made from the results of a study
- Explanation**—attempting to show how and why a phenomenon operates as it does
- Explanatory research**—testing hypotheses and theories that explain how and why a phenomenon operates as it does
- Exploration**—attempting to generate ideas about phenomena
- Exploratory method**—a bottom-up or theory-*generation* approach to research

- Extended fieldwork**—collecting data in the field over an extended period of time
- External criticism**—the validity, trustworthiness, or authenticity of the source
- External validity**—the extent to which the study results can be generalized to and across populations of persons, settings, times, outcomes, and treatment variations
- Extraneous variable**—any variable other than the independent variable that might influence the dependent variable; a variable that you need to “control for” to eliminate it as a competing explanation for the observed relationship between an independent and dependent variable
- Extreme-case sampling**—identifying the extremes or poles of some characteristic and then selecting cases representing these extremes for examination
- Facesheet codes**—codes that apply to a complete document or case
- Factor analysis**—a statistical procedure that analyzes correlations among test items and tells you the number of factors present. It tells you whether the test is unidimensional or multidimensional
- Factorial design**—a design in which two or more independent variables, at least one of which is manipulated, are simultaneously studied to determine their independent and interactive effects on the dependent variable
- Factorial design based on a mixed model**—a factorial design in which different participants are randomly assigned to the different levels of one independent variable, but all participants take all levels of another independent variable
- Field experiment**—an experimental study that is conducted in a real-life setting
- Field notes**—notes taken by an observer
- Focus group**—a moderator leads a discussion with a small group of people
- Formative evaluation**—evaluation focused on improving the evaluation object
- Frequency distribution**—arrangement in which the frequencies of each unique data value are shown
- Frontstage behavior**—what people want or allow us to see
- Full board review**—review by all members of the IRB
- Fully anchored rating scale**—all points are anchored on the rating scale
- Fundamental principle of mixed research**—the researcher should strategically mix or combine qualitative and quantitative approaches to produce an overall design with complementary strengths and nonoverlapping weaknesses
- General linear model**—a mathematical procedure that is the “parent” of many statistical techniques
- Generalize**—make statements about a population based on sample data
- Going native**—identifying so completely with the group being studied that you can no longer remain objective

- Grounded theory**—a general methodology for developing theory that is grounded in data systematically gathered and analyzed
- Grounded theory research**—a qualitative approach to generating and developing a theory from the data that the researcher collects
- Group moderator**—the person leading the focus group discussion
- Grouped frequency distribution**—the data values are clustered or grouped into separate intervals, and the frequencies of each interval are given
- Heterogeneous**—a set of numbers with a great deal of variability
- Histogram**—a graphic that shows the frequencies and shape that characterize a quantitative variable
- Historical research**—research about people, places, and events in the past; the process of systematically examining past events or combinations of events to arrive at an account of what happened in the past
- History**—any event, other than a planned treatment event, that occurs between the pretest and posttest measurement of the dependent variable and influences the postmeasurement of the dependent variable
- Holism**—the idea that the whole is greater than the sum of its parts
- Holistic description**—the description of how members of a group interact and how they come together to make up the group as a whole
- Homogeneity**—in test validity, refers to how well the different items in a test measure the same construct or trait
- Homogeneous**—a set of numbers with little variability
- Homogeneous sample selection**—selecting a small and homogeneous case or set of cases for intensive study
- Homogeneous test**—a unidimensional test in which all the items measure a single construct
- Hypothesis**—a prediction or educated guess; the formal statement of the researcher's prediction of the relationship that exists among the variables under investigation
- Hypothesis testing**—the branch of inferential statistics that is concerned with how well the sample data support a null hypothesis and when the null hypothesis can be rejected
- Ideographic knowledge**—understanding of particular events, people, and groups
- Incompatibility thesis**—the proposition that one cannot mix quantitative and qualitative research
- Independent variable**—a variable that is presumed to cause a change in another variable
- Indirect effect**—an effect occurring through an intervening variable
- Inductive codes**—codes that are generated by a researcher by directly examining the data
- Inductive reasoning**—the process of drawing a conclusion that is “probably” true

- Inferential statistics**—statistics that go beyond the immediate data and infer the characteristics of populations based on samples; they use the laws of probability to make inferences and draw statistical conclusions
- Influence**—attempting to apply research to make certain outcomes occur
- Informal conversational interview**—spontaneous, loosely structured interview
- Informed consent**—agreeing to participate in a study after being informed of its purpose, procedures, risks, benefits, alternative procedures, and limits of confidentiality
- In-person interview**—an interview conducted face to face
- Inside-outside validity**—the extent to which the researcher accurately understands, uses, and presents the participants’ subjective insider or “native” views (also called the “emic” viewpoint) and the researcher’s objective outsider view (also called the “etic” viewpoint)
- Institutional Review Board (IRB)**—the institutional review committee that assesses the ethical acceptability of research proposals
- Instrumental case study**—interest is in understanding something more general than the particular case
- Instrumentation**—any change that occurs in the way the dependent variable is measured
- Intelligence**—the ability to think abstractly and to learn readily from experience
- Interaction effect**—when the effect of one independent variable depends on the level of another independent variable
- Intercoder reliability**—consistency among different coders
- Interim analysis**—the cyclical process of collecting and analyzing data during a single research study
- Internal consistency**—the consistency with which the items on a test measure a single construct
- Internal criticism**—the reliability or accuracy of the information contained in the sources collected
- Internal validity**—the ability to infer that a causal relationship exists between two variables
- Internet**—a “network of networks” consisting of millions of computers and tens of millions of users all over the world, all of which are interconnected to promote communication
- Internet experiment**—an experimental study that is conducted over the Internet
- Interpretive validity**—accurately portraying the meaning given by the participants to what is being studied
- Interrupted time-series design**—a design in which a treatment condition is assessed by comparing the pattern of pretest responses with the pattern of posttest responses obtained from a single group of participants
- Interscorer reliability**—the degree of agreement or consistency between two or more scorers, judges, or raters

- Interval scale**—a scale of measurement that has equal intervals of distances between adjacent numbers
- Intervening variable**—a variable occurring between two other variables in a causal chain
- Interview**—a data-collection method in which an interviewer asks an interviewee questions
- Interview guide approach**—specific topics and/or open-ended questions are asked in any order
- Interview protocol**—data-collection instrument used in an interview
- Interviewee**—the person being asked questions
- Interviewer**—the person asking the questions
- Intracoder reliability**—consistency within a single individual
- Intrinsic case study**—interest is in understanding a specific case
- Introduction**—the section that introduces the research topic and establishes its importance and significance
- Investigator triangulation**—the use of multiple investigators in collecting and interpreting the data
- Item stem**—the set of words forming a question or statement
- k**—the size of the sampling interval
- Known groups evidence**—evidence that groups that are known to differ on the construct do differ on the test in the hypothesized direction
- Laboratory experiment**—a study conducted in a controlled environment where one or more variables are precisely manipulated and all or nearly all extraneous variables are controlled
- Laboratory observation**—observation done in the lab or other setting set up by the researcher
- Leading question**—a question that suggests a certain answer
- Level of confidence**—the probability that a confidence interval to be constructed from a random sample will include the population parameter
- Life-world**—an individual's inner world of immediate experience
- Likert scale**—a specific type of commonly used summated rating scale
- Line graph**—a graph that relies on the drawing of one or more lines
- Linguistic-relativity hypothesis**—the idea that people see and understand the world through the lens of their local language
- Loaded question**—a question containing emotionally charged words
- Logic of significance testing**—understanding and following the steps shown in Table 18.3
- Longitudinal research**—data are collected at multiple time points and comparisons are made across time
- Low-inference descriptors**—description that is phrased very similarly to the participants' accounts and the researchers' field notes

- Lower limit**—the smallest number on a confidence interval
- Main effect**—the effect of one independent variable
- Manipulation**—an intervention studied by an experimenter
- Margin of error**—one-half the width of a confidence interval
- Marginal mean**—the mean of scores in the cells of a column or a row
- Master list**—a list of all the codes used in a research study
- Matching**—equating the comparison groups on one or more variables that are correlated with the dependent variable
- Matching variable**—the variable the researcher matches to eliminate it as an alternative explanation
- Maturation**—any physical or mental change that occurs over time that affects performance on the dependent variable
- Maximum variation sampling**—purposively selecting a wide range of cases
- Mean**—the arithmetic average
- Measure of central tendency**—the single numerical value considered most typical of the values of a quantitative variable
- Measure of variability**—a numerical index that provides information about how spread out or how much variation is present
- Measurement**—assigning symbols or numbers to something according to a specific set of rules
- Measures of relative standing**—provide information about where a score falls in relation to the other scores in the distribution of data
- Median**—the 50th percentile
- Memoing**—recording reflective notes about what you are learning from the data
- Mental Measurements Yearbook**—one of the primary sources of information about published tests
- Meta-analysis**—a quantitative technique that is used to integrate and describe the results of a large number of studies
- Meta-inference**—an inference or conclusion that builds on or integrates quantitative and qualitative findings
- Method**—the section that sells the reader on the research design and the method of data collection
- Method of data collection**—technique for physically obtaining data to be analyzed in a research study
- Method of working multiple hypotheses**—attempting to identify rival explanations
- Methods triangulation**—the use of multiple research methods

- Mixed data analysis**—the use of both quantitative and qualitative analytical procedures in a research study
- Mixed purposeful sampling**—the mixing of more than one sampling strategy
- Mixed questionnaire**—a questionnaire based on a mixture of open-ended and closed-ended items
- Mixed research**—the broad type of research in which elements or approaches or other paradigm characteristics from quantitative and qualitative research are combined or mixed in a research study
- Mixed sampling designs**—the eight sampling designs that result from crossing the time orientation criterion and the sample relationship criterion
- Mode**—the most frequently occurring number
- Moderator variable**—a variable that changes the relationship between other variables
- Modernism**—a term used by postmodernists to refer to an earlier and outdated period in the history of science that viewed the world as a static (i.e., unchanging) machine in which everyone follows the same laws of behavior
- Multigroup research design**—a research design that includes more than one group of participants
- Multiple operationalism**—the use of several measures of a construct
- Multiple regression**—regression based on one dependent variable and two or more independent variables
- Multiple validities**—the extent to which all of the pertinent validities (quantitative, qualitative, and mixed) are addressed and resolved successfully
- Multiple-baseline design**—a single-case experimental design in which the treatment condition is successively administered to different participants or to the same participant in several settings after baseline behaviors have been recorded for different periods of time
- Mutually exclusive**—the property that response categories or intervals do not overlap
- Mutually exclusive categories**—a set of categories that are separate or distinct
- N*—the population size
- n*—the sample size
- Naturalistic generalization**—generalizing on the basis of similarity
- Naturalistic observation**—observation done in real-world settings
- Negative correlation**—the situation when scores on two variables tend to move in opposite directions
- Negative criticism**—establishing the reliability or authenticity and accuracy of the content of the documents and other sources used by the researcher
- Negative-case sampling**—attempting to select cases that disconfirm the researcher's expectations and generalizations

- Negatively skewed**—skewed to the left
- Network diagram**—a diagram showing the direct links between variables or events over time
- Nominal scale**—a scale of measurement that uses symbols, such as words or numbers, to label, classify, or identify people or objects
- Nomothetic knowledge**—understanding of general scientific or causal laws
- Nondirectional alternative hypothesis**—an alternative hypothesis that includes the not equal sign
- Nonequivalent comparison-group design**—a design consisting of a treatment group and a nonequivalent untreated comparison group both of which are administered pretest and posttest measures.
- Nonexperimental research**—research in which there is no manipulation of the independent variable and no random assignment to groups by the researcher
- Normal distribution**—a unimodal, symmetrical, bell-shaped distribution that is the theoretical model of many variables
- Norming group**—the specific group for which the test publisher or researcher provides evidence for test validity and reliability
- Norms**—the written and unwritten rules that specify appropriate group behavior
- Null hypothesis**—a statement about a population parameter
- Numerical rating scale**—a rating scale that includes a set of numbers with anchored endpoints
- Observation**—watching the behavioral patterns of people
- Observer-as-participant**—researcher spends limited amount of time observing group members and tells members they are being studied
- Official documents**—anything written, photographed, or recorded by an organization
- One-group posttest-only design**—administering a posttest to a single group of participants after they have been given an experimental treatment condition
- One-group pretest- posttest design**—a research design in which a treatment condition is administered to one group of participants after pretesting but before posttesting on the dependent variable
- One-stage cluster sampling**—a set of randomly selected clusters in which all the elements in the selected clusters are included in the sample
- One-way analysis of variance**—statistical test used to compare two or more group means
- Open coding**—the first stage in grounded theory data analysis
- Open-ended question**—a question that allows participants to respond in their own words
- Operationalism**—representing constructs by a specific set of steps or operations
- Opportunistic sampling**—selecting cases when the opportunity occurs

- Oral histories**—interviews with a person who has had direct or indirect experience with or knowledge of the chosen topic
- Order effect**—a sequencing effect that occurs from the order in which the treatment conditions are administered
- Ordinal interaction effect**—an interaction effect that occurs when the lines on a graph plotting the effect do not cross
- Ordinal scale**—a rank-order scale of measurement
- Oriental research**—research explicitly done for the purpose of advancing an ideological position or orientation
- Outcome validity**—the ability to generalize across different but related dependent variables
- Outlier**—a number that is very atypical of the other numbers in a distribution
- Panel study**—study in which the same individuals are studied at successive points over time
- Paradigmatic validity**—the degree to which the mixed researcher clearly explains his or her philosophical beliefs about research.
- Parameter**—a numerical characteristic of a population
- Partial correlation**—used to examine the relationship between two quantitative variables controlling for or “partialling out” one or more quantitative extraneous variables
- Partial regression coefficient**—the regression coefficient obtained in multiple regression; it is an index of the relationship between the independent variable and the dependent variable controlling for the other independent variables in the multiple regression equation
- Partially spurious**—when the relationship between two variables is partially due to one or more third variable
- Participant feedback**—discussion of the researcher’s conclusions with the actual participants
- Participant-as-observer**—researcher spends extended time with the group as an insider and tells members they are being studied
- Passive consent**—a process whereby consent is given by not returning the consent form
- Path coefficient**—the qualitative index providing information about a direct effect
- Pattern matching**—predicting a pattern of results and determining whether the actual results fit the predicted pattern
- Peer review**—discussing one’s interpretations and conclusions with one’s peers or colleagues
- Percentile rank**—the percentage of scores in a reference group that fall below a particular raw score
- Percentile ranks**—scores that divide a distribution into 100 equal parts
- Performance measures**—a test-taking method in which the participants perform some real-life behavior that is observed by the researcher
- Periodicity**—the presence of a cyclical pattern in the sampling frame

- Personal documents**—anything written, photographed, or recorded for private purposes
- Personality**—the relatively permanent patterns that characterize and can be used to classify individuals
- Phenomenology**—a form of qualitative research in which the researcher attempts to understand and describe how one or more individuals experience a phenomenon
- Photo interviewing**—process of eliciting data from a person using photographic or video imagery when conducting interviews
- Photo interviewing analysis**—the analysis is done only by the participant who examines and “analyzes” visual images
- Physical data**—any material thing created or left by humans that might provide information about a phenomenon of interest to a researcher
- Pilot test**—a preliminary test of your questionnaire
- Plagiarism**—using work produced by others and presenting it as your own
- Point estimate**—the estimated value of a population parameter
- Point estimation**—the use of the value of a sample statistic as the estimate of the value of a population parameter
- Political validity**—the degree to which a mixed researcher addresses the interests and viewpoints of multiple stakeholders in the research process
- Population**—the large group to which a researcher wants to generalize the sample results
- Population parameter**—a numerical characteristic of a population
- Population validity**—the ability to generalize the study results to individuals who were not included in the study
- Positive correlation**—the situation when scores on two variables tend to move in the same direction
- Positive criticism**—ensuring that the statements made or the meaning conveyed in the various sources is correct
- Positively skewed**—skewed to the right
- Positivism**—a term used by qualitative research to refer to what might better be labeled “scientism,” which is the belief that all true knowledge must be based on science
- Post hoc fallacy**—making the argument that because A preceded B, A must have caused B
- Post hoc test**—a follow-up test to the analysis of variance
- Postmodernism**—a historical intellectual movement that constructs its self-image as in opposition to modernism; postmodernism emphasizes the primacy of individuality, difference, fragmentation, flux, constant change, lack of foundations for thought, and interpretation
- Poststructuralism**—a historical intellectual movement that rejects universal truth and emphasizes differences, deconstruction, interpretation, and the power of ideas over peoples’ behavior

- Posttest-only control-group design**—administering a posttest to two randomly assigned groups of participants after one group has been administered the experimental treatment condition
- Posttest-only design with nonequivalent groups**—comparing posttest performance of a group of participants who have been given an experimental treatment condition with a group that has not been given the experimental treatment condition
- Power**—the likelihood of rejecting the null hypothesis when it is false
- Practical significance**—a conclusion made when a relationship is strong enough to be of practical importance
- Pragmatism**—philosophical position that what works is important or “valid”
- Pragmatist philosophy**—a philosophy that says to use what works
- Prediction**—attempting to predict or forecast a phenomenon
- Predictive evidence**—validity evidence based on the relationship between test scores collected at one point in time and criterion scores obtained at a later time
- Predictive research**—research focused on predicting the future status of one or more dependent variables based on one or more independent variables
- Presence or absence technique**—manipulating the independent variable by presenting one group the treatment condition and withholding it from the other group
- Presentism**—the assumption that the present-day connotations of terms also existed in the past
- Pretest-posttest control-group design**—a research design that administers a posttest to two randomly assigned groups of participants after both have been pretested and one of the groups has been administered the experimental treatment condition
- Primary source**—a source in which the creator was a direct witness or in some other way directly involved or related to the event
- Principle of evidence**—the philosophical idea that research provides evidence, not proof
- Principle of standardization**—providing exactly the same stimulus to each research participant
- Privacy**—having control of others’ access to information about you
- Probabilistic**—stating what is likely to occur, not what will necessarily occur
- Probabilistic causes**—causes that usually produce an outcome; changes in variable A tend to produce changes in variable B
- Probability proportional to size**—a type of two-stage cluster sampling in which each cluster’s chance of being selected in stage one depends on its population size
- Probability value**—the probability of the result of your research study, assuming that the null hypothesis is true
- Probes**—prompts to obtain response clarity or additional information
- Problem of induction**—things that happened in the past might not happen in the future

- Procedure**—the section that describes how the study will be executed
- Projective measures**—a test-taking method in which the participants provide responses to ambiguous stimuli
- Proportional stratified sampling**—type of stratified sampling in which the sample proportions are made to be the same as the population proportions on the stratification variable
- Prospective study**—another term applied to a panel study
- PsycINFO**—a database containing entries from *Psychological Abstracts*
- Purpose of a research study**—a statement of the researcher's intent or objective of the study
- Purposive sampling**—the researcher specifies the characteristics of the population of interest and locates individuals with those characteristics
- Qualitative interview**—an interview providing qualitative data
- Qualitative observation**—observing all potentially relevant phenomena
- Qualitative questionnaire**—a questionnaire based on open-ended items and typically used in exploratory or qualitative research
- Qualitative research**—research that relies primarily on the collection of qualitative data
- Qualitative research question**—an interrogative sentence that asks a question about some process, issue, or phenomenon to be explored
- Qualitative researcher**—a researcher who focuses on exploration and the generation and construction of theories using qualitative data
- Qualitizing**—converting quantitative data into qualitative data
- Quantitative observation**—standardized observation
- Quantitative questionnaire**—a questionnaire based on closed-ended items and typically used in confirmatory or quantitative research
- Quantitative research**—research that relies primarily on the collection of quantitative data
- Quantitative research question**—an interrogative sentence that asks a question about the relationship that exists between two or more variables
- Quantitative researcher**—a researcher who focuses on testing theories and hypotheses using quantitative data to see if they are confirmed or not
- Quantitative variable**—a variable that varies in degree or amount
- Quantitizing**—converting qualitative data into quantitative data
- Quasi-experimental research design**—an experimental research design that does not provide for full control of potential confounding variables primarily because it does not randomly assign participants to comparison groups
- Questionnaire**—a self-report data-collection instrument filled out by research participants
- Quota sampling**—the researcher determines the appropriate sample sizes or quotas for the groups identified as important and takes convenience samples from those groups

- Random assignment**—a procedure that makes assignments to conditions on the basis of chance and in this way maximizes the probability that the comparison groups will be equated on all extraneous variables; randomly assigning a set of people to different groups
- Random selection**—randomly selecting a group of people from a population
- Range**—the difference between the highest and lowest numbers
- Ranking**—the ordering of responses in ascending or descending order
- Rate**—the percentage of people in a group who have a specific characteristic
- Rating scale**—a continuum of response choices
- Ratio scale**—a scale of measurement that has a true zero point as well as the characteristics of the nominal (labeling), ordinal (rank ordering), and interval scales (equal distances)
- Rationalism**—the philosophical idea that reason is the primary source of knowledge
- Reactivity**—changes that occur in people because they know they are being observed
- Reference group**—the norm group that is used to determine the percentile ranks
- Reflexivity**—self-reflection by the researcher on his or her biases and predispositions
- Regression analysis**—a set of statistical procedures that are used to explain or predict the values of a dependent variable on the basis of the values of one or more independent variables
- Regression artifacts**—the tendency of very high scores to become lower and very low scores to become higher on posttesting of another or the original measure
- Regression coefficient**—the predicted change in Y given a one-unit change in X
- Regression equation**—the equation that defines the regression line
- Regression line**—the line that best fits a pattern of observations
- Regression-discontinuity design**—a design that assesses the effect of a treatment condition by looking for a discontinuity in regression lines between individuals who score lower and higher than some predetermined cutoff score
- Reliability**—the consistency or stability of test scores
- Reliability coefficient**—a correlation coefficient that is used as an index of reliability
- Repeated sampling**—drawing many or all possible samples from a population
- Repeated-measures design**—a design in which all participants participate in all experimental treatment conditions
- Replication**—research examining the same variables with different people in different ways
- Replication logic**—the idea that the more times a research finding is shown to be true with different sets of people, the more confidence we can place in the finding and in generalizing beyond the original participants
- Representative sample**—a sample that resembles the population
- Research design**—the outline, plan, or strategy that is used to answer a research question
- Research ethics**—a set of principles to guide and assist researchers in conducting ethical studies

- Research literature**—set of published research studies on a particular topic
- Research method**—overall research design and strategy
- Research misconduct**—fabrication, falsification, or plagiarism in proposing, performing, or reviewing research, or reporting research results
- Research paradigm**—a perspective held by a community of researchers that is based on a set of shared assumptions, concepts, values, and practices
- Research participants**—the individuals who participate in the research study
- Research problem**—an education issue or problem within a broad topic area
- Research proposal**—the written document summarizing prior literature and describing the procedure to be used to answer the research question(s)
- Research topic**—the broad subject matter area to be investigated
- Researcher bias**—obtaining results consistent with what the researcher wants to find
- Researcher-as-detective**—metaphor applied to the researcher when searching for cause and effect
- Response rate**—the percentage of people in a sample that participate in a research study
- Response set**—the tendency to respond in a specific direction regardless of content
- Retrospective questions**—questions asking people to recall something from an earlier time
- Retrospective research**—the researcher starts with the dependent variable and moves backward in time
- Reverse-worded item**—an item that a lower score indicates a higher level on a construct of interest. Also called reverse-scored item.
- Rule of parsimony**—preferring the most simple theory that works
- Sample**—the set of elements or cases taken from a population
- Sample integration validity**—the degree to which a mixed researcher makes appropriate generalizations from mixed samples
- Sample relationship criterion**—says the samples, taken in combination, are identical, parallel, nested, or multilevel
- Sampling**—the process of drawing a sample from a population
- Sampling distribution**—the theoretical probability distribution of the values of a statistic that results when all possible random samples of a particular size are drawn from a population
- Sampling distribution of the mean**—the theoretical probability distribution of the means of all possible random samples of a particular size drawn from a population
- Sampling error**—the difference between a sample statistic and the corresponding population parameter
- Sampling frame**—a list of all the elements in a population
- Sampling interval**—the population size divided by the desired sample size

- Scatterplot**—a graph used to depict the relationship between two quantitative variables
- Science**—an approach for the generation of knowledge
- Secondary data**—existing data originally collected or left behind at an earlier time by a different person for a different purpose
- Secondary source**—a source that was created from primary sources, secondary sources, or some combination of the two
- Segmenting**—dividing data into meaningful analytical units
- Selection-history effect**—occurs when an event occurring between the pretest and posttest differentially affects the different comparison groups
- Selection-maturation effect**—occurs when the different comparison groups experience a different rate of change on a maturation variable
- Selective coding**—the final stage in grounded theory data analysis
- Self-report**—a test-taking method in which the participants check or rate the degree to which various characteristics are descriptive of themselves
- Semantic differential**—a scaling technique in which participants rate a series of objects or concepts
- Semiotic visual analysis**—the identification and interpretation of symbolic meaning of visual data
- Semiotics**—the study of signs
- Sequencing effects**—biasing effects that can occur when each participant must participate in each experimental treatment condition
- Sequential validity**—the degree to which a mixed researcher addresses any effects from the ordering of qualitative and quantitative phases
- Shared beliefs**—the specific cultural conventions or statements that people who share a culture hold to be true or false
- Shared values**—the culturally defined standards about what is good or bad or desirable or undesirable
- Significance level**—the cutoff the researcher uses to decide when to reject the null hypothesis
- Significance testing**—a commonly used synonym for hypothesis testing
- Simple case of causal-comparative research**—when there is one categorical independent variable and one quantitative dependent variable
- Simple case of correlational research**—when there is one quantitative independent variable and one quantitative dependent variable
- Simple cases**—when there is only one independent variable and one dependent variable
- Simple random sample—a sample drawn by a procedure in which every member of the population has an equal chance of being selected
- Simple regression**—regression based on one dependent variable and one independent variable

Single-case experimental designs—designs that use a single participant to investigate the effect of an experimental treatment condition

Skewed—not symmetrical

Snowball sampling—each research participant is asked to identify other potential research participants

Social desirability response set—the tendency to provide answers that are socially desirable

SocINDEX—a database containing entries from *Sociological Abstracts*

Sourcing—information that identifies the source or attribution of the document

Spearman-Brown formula—a statistical formula used for correcting the split-half reliability coefficient

Special case of the general linear model—one of the “children” of a broader statistical procedure known as the general linear model (GLM)

Split-half reliability—a measure of the consistency of the scores obtained from two equivalent halves of the same test

Spurious relationships—when the relationship between two variables is due to one or more third variables

Standard deviation—the square root of the variance

Standard error—the standard deviation of a sampling distribution

Standard scores—scores that have been converted from one scale to another to have a particular mean and standard deviation

Standardization—presenting the same stimulus to all participants

Standardized open-ended interview—a set of open-ended questions are asked in a specific order and exactly as worded

Starting point—a randomly selected number between 1 and k

States—distinguishable but less enduring ways in which individuals vary

Statistic—a numerical characteristic of a sample

Statistical conclusion validity—the ability to infer that the independent and dependent variables are related and the strength of that relationship

Statistically significant—a research finding that is probably not attributable to chance alone; a real relationship; the claim made in significance testing that the evidence suggests an observed result was probably *not* due to chance

Stratification variable—the variable on which the population is divided

Stratified sampling—dividing the population into mutually exclusive groups and then selecting a random sample from each group

Structuralism—a broad or grand theory that emphasizes the importance of cultural-structural-institutional and functional relations as providing a large part of the social world in which humans live, and this structure is key in determining meaning and influencing human behavior

- Subculture**—a culture embedded within a larger culture
- Summated rating scale**—a multi-item scale that has the responses for each person summed into a single score
- Summative evaluation**—evaluation focused on determining the overall effectiveness and usefulness of the evaluation object
- Survey research**—a nonexperimental research method based on questionnaires or interviews
- Synthesis**—the selection, organization, and analysis of the materials collected
- Systematic error**—an error that is present every time an instrument is used
- Systematic sample**—a sample obtained by determining the sampling interval, selecting a random starting point between 1 and k , and then selecting every k th element
- Table of random numbers**—a list of numbers that fall in a random order
- Target population**—the larger population to whom the study results are to be generalized
- Telephone interview**—an interview conducted over the phone
- Temporal validity**—the extent to which the study results can be generalized across time
- Test-retest reliability**—consistency of test scores over time
- Testing**—in measurement, testing refers to the measurement of variables; in research design, testing is the threat validity in which a change in scores obtained on the second administration of a test is the result of participants having previously taken the test
- Tests in Print**—a primary source of information about published tests
- Theoretical saturation**—occurs when no new information or concepts are emerging from the data and the grounded theory has been validated
- Theoretical sensitivity**—when a researcher is effective at thinking about what kinds of data need to be collected and what aspects of already collected data are the most important for the grounded theory
- Theoretical validity**—the degree to which a theoretical explanation fits the data
- Theory**—an explanation or an explanatory system that discusses how a phenomenon operates and why it operates as it does
- Theory triangulation**—the use of multiple theories and perspectives to help interpret and explain the data
- Think-aloud technique**—has participants verbalize their thoughts and perceptions while engaged in an activity
- Third variable**—a confounding extraneous variable
- Third-variable problem**—an observed relationship between two variables that may be due to an extraneous variable
- Three necessary conditions**—three things that must be present if you are to contend that causation has occurred
- Time orientation criterion**—says the samples are either concurrent or sequential

Time-interval sampling—checking for events during specific time intervals

Traits—distinguishable, relatively enduring ways in which one individual differs from another

Transcription—transforming qualitative data into typed text

Treatment diffusion—the participants in one treatment condition are exposed to all or some of the other treatment condition

Treatment variation validity—the ability to generalize across variations of the treatment

Trend study—independent samples are taken from a population over time and the same questions are asked

***t*-Test for correlation coefficients**—statistical test used to determine whether a correlation coefficient is statistically significant

***t*-Test for independent samples**—statistical test used to determine whether the difference between the means of two groups is statistically significant

***t*-Test for regression coefficients**—statistical test used to determine whether a regression coefficient is statistically significant

Two-stage cluster sampling—a set of clusters is randomly selected and then a random sample of elements is drawn from each of the clusters selected in stage one

Type I error—rejecting a true null hypothesis

Type II error—failing to reject a false null hypothesis

Type technique—manipulating the independent variable by varying the type of variable presented to the different comparison groups

Typical-case sampling—selecting what are believed to be average cases

Typology—a classification system that breaks something down into different types or kinds

Upper limit—the largest number on a confidence interval

Utilitarianism—an ethical approach that says judgments of the ethics of a study depend on the consequences the study has for the research participants and the benefits that may arise from the study

Vagueness—uncertainty in the meaning of words or phrases

Validation—the process of gathering evidence that supports inferences made on the basis of test scores

Validity—the accuracy of the inferences, interpretations, or actions made on the basis of test scores

Validity coefficient—a correlation coefficient that is computed to provide validity evidence, such as the correlation between test scores and criterion scores

Validity evidence—empirical evidence and theoretical rationales that support the inferences or interpretations made from test scores

Variable—a condition or characteristic that can take on different values or categories

Variance—a measure of the average deviation from the mean in squared units

Verstehen—method of empathetic understanding of others' viewpoints, intentions, and cultural beliefs

Visual content analysis—the identification and counting of events, characteristics, or other phenomena in visual data.

Visual data collection—process of collecting data using visual sources, such as photographs, drawings, graphics, paintings, film, and video

Warranted assertability—the standard you meet when you provide very good evidence

Weakness minimization validity—the degree to which a mixed researcher combines qualitative and quantitative approaches to have nonoverlapping weaknesses.

Web surveys—participants read and complete a survey instrument that is developed for and located on the web

Y-intercept—the point where the regression line crosses the Y-axis

Z-score—a raw score that has been transformed into standard deviation units