

## Chapter 6 – Qualitative & Quantitative Research Design

- I. Qualitative and Quantitative Orientations Toward Research
  - a. Quantitative Research
    - i. Quantitative Data
      - 1. Data collected in the form of numbers. Typically called “hard data.” Almost all quantitative researchers rely on a positivist approach to social science. They are also likely to use a technocratic perspective, apply “reconstructed logic,” and follow a linear research path. They speak a language of “variables and hypotheses.” Quantitative researchers emphasize precisely measuring variables and testing hypotheses that are linked to general causal explanations.
    - ii. Positivism
      - 1. The practice in which metaphysical speculation is rejected in favor of ‘positive’ knowledge about the empirical world based on systematic observation and experiment.
    - iii. Nomothetic
      - 2. Seeks to explain a class of situations or events rather than a single one. Moreover, it seeks to explain “efficiently,” using only one or just a few explanatory factors. Finally, it settles for partial rather than full explanation of a type of situation.
    - iv. Technocratic Perspective
      - 1. The goal of research is to discover and document lawlike generalizations oriented toward increasing efficiency.
    - v. Reconstructed Logic
      - 1. Means that the logic of how to do research is highly idealized, formal, and systematic in form.
    - vi. Linear Research Path
      - 1. Quantitative research typically follows a fixed sequence of steps.
  - b. Qualitative Research: A Brief Comparison
    - i. Qualitative Data
      - 1. Data collected in the form of impressions, words, sentences, photos, symbols, and the like. Qualitative researchers often rely on interpretive or critical social science. They are more likely to use a transcendent perspective, apply “logic in practice,” and follow a nonlinear research path. Qualitative researchers speak a language of “cases and contexts.” They emphasize conducting detailed examinations of cases that occur in a natural social setting.
    - iii. Idiographic
      - 1. “Idio-” in this context means unique, separate, peculiar, or distinct, as in the word “idiosyncrasy.” When we have completed an idiographic explanation, we feel that we fully understand the many causes of what happened in a particular instance. At the same time our scope of explanation is limited to the case at hand. While parts of the idiographic explanation might apply to other situations, our intention is to explain fully one case.
    - ii. Transcendent Perspective
      - 1. Its goal is to remove false beliefs held by those being studied and to treat people as creative, compassionate living beings, not as objects.
    - iii. Logic in Practice
      - 1. The process of carrying out research which has relatively few guidelines and attempts to stay away from strict regimentation. Answers questions regarding methodological procedure according to practicality and reason.

- iv. Nonlinear Research Path
          - 1. Research that does not follow a particular path or straight line. Researchers often go from one step to another as insight is gained.
  - II. Triangulation in Social Research
    - a. A process of observing whereby researchers examine a phenomenon from different angles or viewpoints. There are several types of triangulation used by social researchers.
      - i. Types of Triangulation in Social Research
        - 1. Triangulation of Measure
          - a. Researchers use multiple methods or instruments to measure the same phenomena.
        - 2. Triangulation of Observers
          - a. Researchers use multiple observers to examine the same phenomena in order to add alternative perspectives, backgrounds, and social characteristics.
        - 3. Triangulation of Theory
          - a. Researchers use multiple theoretical perspectives early in the planning stages of research, or when interpreting data.
        - 4. Triangulation of Method
          - a. Requires the use of both qualitative and quantitative research designs.
- III. Objectivity and Integrity
  - a. Opportunities for biased, dishonest, or unethical research exists in all research. All social researchers strive towards being fair, honest, truthful, and unbiased in all research activity.
    - i. Differences in Qualitative and Quantitative Approaches
      - 1. Quantitative
        - a. Attempt to eliminate the human factor and rely on standardized methodological procedures.
      - 2. Qualitative
        - a. Emphasize the human factor and stress intimate, firsthand knowledge of the research setting.
- IV. Quantitative Design Issues
  - a. The Traditional Model of Science
    - i. Theory
      - 1. A theory is a system of abstract statements that explain how and why phenomena in the universe operate. In other words, theory is the vehicle in science for understanding. Theory and observation go together in science, but sometimes theory precedes observation and other times observation comes before theory.
    - ii. Operationalization
      - 1. Operationalization is simply the specification of the steps, procedures, or operations that we go through to actually identify and measure the variables we intend to observe.
    - iii. Observation
      - 1. The final step in the traditional model of science involves actual observation- examining the empirical world and making measurements of what is “seen.” Having developed theoretical expectations and having created a strategy for looking, we next look at the way things are. Sometimes this step involves conducting experiments, interviewing people, or visiting who/what/where we are interested in and watching it. Sometimes the observations are structured around the testing of specific hypotheses; sometimes the inquiry is less structured.
  - b. The Language of Variables and Hypotheses
    - i. Variable
      - 1. A variable is a concept that varies.
        - a. Attributes
          - i. A value or category of a variable. The variable sex has only two attributes, female and male for example.

- b. Types of Variables
  - i. Independent
    - 1. The cause variable, or the one that identifies forces or conditions that act on something else.
  - ii. Dependent
    - 1. The variable that is the effect or is the result or outcome of another variable.
  - iii. Intervening
    - 1. A variable that comes between the independent and dependent variable.
  - iv. Antecedent
    - 1. A variable that comes before the independent variable.
  - v. Exogenous
    - 1. Any variable that is unaccounted for in the initial analysis of data.
- ii. Hypotheses
  - 1. Is defined as a statement about the relationship between two variables.
    - a. Types of Hypotheses
      - i. Research Hypothesis
        - 1. A hypothesis that states that a relationship between the independent and dependent variable exists. Research hypotheses can be either direct or inverse.
          - a. Direct
            - i. States that the values for both the independent and dependent variables will either increase or decrease in the same direction.
          - b. Inverse
            - i. States that the values for both the independent and dependent variables will increase or decrease in opposite directions.
        - ii. Null Hypothesis
          - 1. A hypothesis that states that there exists no relationship between the independent and dependent variable.
      - b. Characteristics of a Hypothesis
        - i. It has at least two variables.
        - ii. It expresses a casual or cause-effect relationship between the variables.
        - iii. It can be expressed as a prediction or expected future outcome.
        - iv. Logically linked to a research question and/or theory.
        - v. It is falsifiable; that is, it is capable of being empirically tested to be found true or false.
    - iii. Do Scientists PROVE Hypotheses?
      - 1. **NO! In fact, scientists typically report that they have evidence that supports or confirms, but does not PROVE the hypothesis.** Moreover, scientists place greater emphasis on information and/or data that refutes a hypothesis compared to data that confirms or supports it.

- V. Aspects of Explanation
  - a. Level of Analysis

- i. Is the level of social reality to which theoretical explanations refer. The level of social reality varies on a continuum from micro level (e.g., individual, small groups) to macro level (e.g., civilizations, societies)
  - b. Unit of Analysis
    - i. Refers to the type of unit a researcher uses when measuring. Common units in sociology include:
      1. Individual
      2. Group (e.g., family)
      3. Organization (e.g., corporation, university)
      4. Social Artifacts (e.g., all newspaper stories about crime)
      5. Social category (e.g., social class, gender)
      6. Social institution (e.g., religion, education, family)
      7. Society (e.g., a nation, tribe)
- VI. Errors in Reason
  - a. Tautology
    - i. Form of circular reasoning in which someone makes a statement that is true by definition. Tautology cannot be tested empirically.
  - b. Teleology
    - i. It appears when saying something occurs because it is part of the “natural unfolding” of an all powerful spirit or Geist.
  - c. Ecological Fallacy
    - i. Arises from a mismatch of units of analysis. It refers to a poor fit between the units for which a researcher has empirical evidence and the unit for which he/she wants to make statements. In other words, it occurs when a researcher gathers data at a higher or aggregated unit of analysis but wants to make a statement about a lower or disaggregated unit.
  - d. Reductionism
    - i. Arises from a mismatch of units of analysis. It refers to a poor fit between the units for which a researcher has empirical evidence and the unit for which he/she wants to make statements. In other words, it occurs when a researcher gathers data at a lower or disaggregated unit of analysis but wants to make a statement about a higher or aggregated unit.
  - e. Spuriousness
    - i. To call a relationship between variables spurious means that it is false, a mirage.