

Qualitative Data Analysis



Mary Cassatt: The Sisters, 1885



Quantitative and Qualitative

Some Definitions

- Quantitative data are observations coded in numerical format.
- Qualitative data are observations coded in any other format besides numbers (e.g., text, photographs, film, voice recordings).
- Quantitative methods generally refer to survey research methods.
- Qualitative methods typically refer to any method besides survey research methods.



Quantitative and Qualitative

Some Definitions (Continued)

- Quantitative methods can be used to collect either quantitative or qualitative data.
- Qualitative methods can be used to collect either quantitative or qualitative data.
- Both quantitative and qualitative data can be used to build theory (i.e., induction).
- Both quantitative and qualitative data can be used to test theory (i.e., deduction).



Quantitative and Qualitative

Some Definitions (Continued)

- Epistemologically, quantitative and qualitative methods do not differ in objectivity, validity, or reliability.
- Epistemologically, quantitative and qualitative data do not differ in objectivity, validity, or reliability.
- The researcher selects the most appropriate method(s) to collect the most appropriate data to answer the research questions.



Linking Theory and Analysis

1. Discovering Patterns

- We defined theory as “an empirically falsifiable set of abstract statements about reality.”
- The term, “empirically falsifiable” reflects a broader range of testing than statistics generated from quantitative data.
- Theories can be empirically falsified using qualitative data.
 - Example: “From my observations of women in the workplace over the past three months, it seems plausible that they are more likely to experience discrimination than are men.”



Linking Theory and Analysis

1. Discovering Patterns (Continued)

- The qualitative test of an hypothesis, although subjective in the sense of relying upon observations of the researcher rather than quantitative statistics, can be equally as valid as the statistical test.
- A qualitative analysis of data uses the same processes of data organization and evaluation as is found in quantitative analysis, albeit with non-numerical observations.



Linking Theory and Analysis

1. Discovering Patterns (Continued)

- The process of data analysis:
 - Frequencies: How often?
 - Magnitudes: How much?
 - Structures: To whom?
 - Processes: In what order?
 - Causes: Why?
 - Consequences: With what outcomes?



Linking Theory and Analysis

1. Discovering Patterns (Continued)

- Variable-oriented analysis: The use of an independent variable to predict an outcome of the dependent variable.
- Case-oriented analysis: Thorough, ideographic examination of a single case.
- Cross-case analysis: Examination of similarities across cases (e.g., an inductive approach to variable-oriented analysis).



Linking Theory and Analysis

2. Grounded Theory Method

- The use of cross-case analysis to inductively create/adopt concepts and build theory.
- A key feature of GTM is the use of the constant comparative method.



Linking Theory and Analysis

2. Grounded Theory Method (Continued)

- Constant comparative method.
 1. Comparing incidents across cases.
 2. Developing/adopting concepts.
 3. Comparing concepts across cases.
 4. Integrating concepts from different avenues of inductive inquiry.
 5. Delimiting the theory (creating/adopting a theoretical approach; ruling out some concepts that seem less important).
 6. Writing theory: Explaining the approach and theory to others.



Linking Theory and Analysis

3. Semiotics

- The “science of signs.”
- Learning the meaning of language, symbols, and behavior within a social setting.
- Focus on content validity of concepts.
- “Signs” can be material artifacts or nonmaterial instances (e.g., “body language,” gestures, word usage).
- Semiotics also focuses on the dramaturgy of everyday life: the presentation of self and meanings to others.



Linking Theory and Analysis

4. Conversation Analysis

- Extremely close scrutiny of the way people converse with one another.
- Especially important to studies of ethnomethodology.
- Assumptions of conversation analysis:
 1. Conversation is a socially structured activity.
 2. Conversation must be understood contextually.
 3. Seeks understanding of the structure and meaning of conversation.



Qualitative Data Processing

1. Coding

- Coding involves classifying or categorizing individual pieces of data.
- Coding of qualitative data can create either qualitative or quantitative categories.
- Coding units: *concepts* are coded as the units of analysis. Thus, a single sentence or several pages of text might coded identically, as an expression or example of a concept.
- Similarly, a unit of analysis might be coded within several coding units simultaneously.



Qualitative Data Processing

1. Coding (Continued)

- Coding as a physical act: The researcher decides how each event or artifact is to be coded.
- This process can be done “by hand” or by the uses of computer software programs.
- Creating codes: The researcher might decide which concepts to investigate *a priori*. In most cases of qualitative analysis, the researcher builds a series of codes inductively through the process of analyzing the data.



Qualitative Data Processing

1. Coding (Continued)

- Creating codes: Creating codes inductively typically requires several iterations of trial and error to decide which codes will be used.
- The researcher begins with “open coding,” the process of creating many codes as one takes an initial look at the data.
- Open coding is followed by “axial coding,” or the process of selecting the key codes and concepts of interest. Axial coding involves a regrouping of the data into the main coding scheme.



Qualitative Data Processing

1. Coding (Continued)

- “Selective coding” seeks to identify *the* central code in the study, the one to which all other codes are related.
- Once a coding scheme is finalized, to the extent that any coding scheme is “final,” the researcher will try to assign instances to the existing coding scheme (i.e., one has to stop building a coding scheme at some time to complete the task of coding).



Qualitative Data Processing

2. Memoing

- Memoing is the process of writing memos to yourself as you develop the coding scheme.
 - These notes help the researcher recall ideas for coding and developing concepts as the data analysis progresses.
 - Code notes identify the code labels and their meanings to the researcher.
 - Theoretical notes remind the researcher of ideas for concept and theory development during the coding process.



Qualitative Data Processing

2. Memoing (Continued)

- Operational notes deal primarily with methodological issues. These are ideas and reminders about the data gathering or coding process itself.
- The elemental memo is a detailed account of relatively specific points of interest to the researcher. The final coding scheme and conceptual development of the study rely upon the compilation of these memos.



Qualitative Data Processing

2. Memoing (Continued)

- Sorting memos are notes regarding the organization and compilation of the elemental memos. These are ideas about how to move to axial codes.
- Integrating memos are ideas about how to organize the axial codes into a coherent account of the data.
- The process of memoing is iterative. The many memos and notes entail a trial and error process of developing the overall conceptual account of the data.



Qualitative Data Processing

3. Concept Mapping

- In qualitative data analysis, the researcher spends a lot of time in committing thoughts to paper, in organizing ideas into a coherent conceptual approach to the data.
- This process is iterative and one of trial and error.
- Placing concepts in a graphical format, called *concept mapping*, can help the researcher organize thoughts.



Computer Programs for Qualitative Data

1. N-Vivo (NUD*IST)

- Computer software programs, such as NUD*IST by N-Vivo, are designed to help the researcher organize thoughts regarding qualitative data.
- The computer program does no active coding itself, but only assists the researcher in marking text, organizing codes, and retrieving text in various grouping schemes as a means of developing axial codes.



Computer Programs for Qualitative Data

1. N-Vivo (Continued)

- Textual data, which might be the raw data or notes taken by the researcher about artifacts, is entered into the word processing component of the program.
- Each unit of analysis is marked with one or codes.
- The researcher can retrieve text within different groupings of codes, develop higher-order, axial codes as well as write memos and notes as the data analysis proceeds.



Computer Programs for Qualitative Data

2. Other Computer Programs

- The Ethnograph
- HyperQual
- HyperResearch
- HyperSoft
- Qualrus
- QUALOG
- Textbase Alpha
- SONAR
- Atlas.ti



Qualitative Analysis of Quantitative Data

Special Note

- It is important to note that qualitative analysis and quantitative analysis are neither competing nor incompatible.
- Unless the one can conduct both types of analysis, in some cases simultaneously, then one is limiting one's potential as a social researcher.
- Qualitative analysis of quantitative data, for example, involves the visual presentation of numerical information to aid understanding.

Questions?