

Analyzing Qualitative Data

What are Qualitative Data?

Qualitative data are words, not numbers. Qualitative procedures of data collection produce narrative information. While narrative information could be converted into numerical categories, such a process would defeat the purposes of the true qualitative evaluator.¹

Qualitative procedures tend to capture broader and more open-ended perspectives about complex phenomena. However, these data are often harder to analyze and summarize.

Qualitative evaluators attempt to expand rather than confine understanding. They do not necessarily try to resolve ambiguity. Rather, they seek to study a concept as it is understood in the context of all those who use it. The Qualitative evaluator is concerned with multiple realities rather than a single reality.²

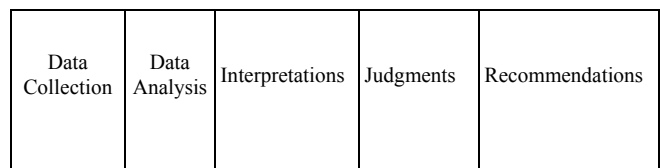
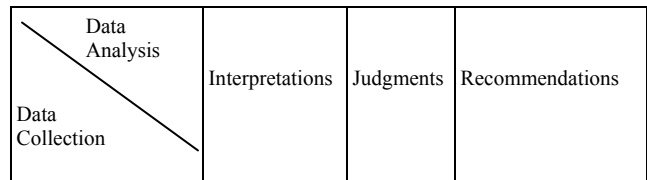
Some Qualitative Collection Procedures¹

- **Wear and tear analysis.** Apparent wear or accumulation on physical objects.
- **Physical evidence analysis.** Residues or other physical by-products are observed.
- **Case studies.** The experiences and characteristics of selected persons in a project.
- **Individual interviews.** Individual's responses and views.
- **Group interviews.** Small groups' responses and views.
- **Panels, hearings.** Opinions, ideas.

- **Records analysis.** Records, files, receipts.
- **Logs.** Own behavior and reactions recorded narratively.
- **Simulations, "in baskets."** Person's behavior in simulated settings.
- **Sociograms.** Preference for friends, work and social relationships.
- **Systems analysis.** Components and subcomponents and their functional inter-dependencies are defined.
- **Advisory, advocate teams.** The ideas and viewpoints of selected persons.
- **Judicial review.** Evidence about activities is weighed and assessed.

Qualitative vs. Quantitative Analyses Diagram 1

Qualitative timeline:



Quantitative timeline:

As illustrated by diagram 1, there is a distinct difference between the timeline of qualitative and quantitative evaluation efforts.

Quantitative data collection requires more preparation time, the analysis does not begin until all data is collected, and the findings are suitable for computer-generated table displays and comparisons.

Qualitative data collection flows more with the context in which the data is collected. Once data collection begins, analysis begins, making the analysis process an integral part of the latter stages of data collection.

Four Levels of Analysis

Analysis and interpretation of qualitative data are not simple, technical processes. There are no formal, universal rules to follow in analyzing and interpreting qualitative data. **ANALYSIS** is the process of bringing order to the data, organizing what there is into patterns, categories and basic descriptive units.

INTERPRETATION involves attaching meaning and significance to the analysis, explaining descriptive patterns, and looking for relationships and linkages among descriptive dimensions.⁵ From this point, it is up to the stakeholder to make **JUDGEMENTS** about and assigning value to what has been analyzed and interpreted.

In any evaluation effort it is helpful to look at four distinct levels. Viewing what has been found and what could be the possibilities allows the evaluator and stakeholder to disagree on Interpretations, Judgements and Recommendations without ever putting the Findings in jeopardy.

- **Findings.** What was said by the participants.
- **Interpretations.** What the findings mean to the evaluator.
- **Judgements.** Are the findings of value to the stakeholder?
- **Recommendations.** What should the stakeholder do?

Four "Nightmares" of Data Analysis:⁴

- Data are no good.
- Systematic measurement error (biased responses).

- Conclusions look trivia or trite.
- Data resist analysis.

It is interesting to note that these four "nightmares" apply to analysis of both Quantitative and Qualitative data.

Qualitative Analysis

Qualitative data analysis is the process of systematically searching and arranging the interview transcripts, fieldnotes, and other materials accumulated to increase the analyst's understanding of them and to enable the analyst to present what was discovered to others.²

Focus Group Interviews, Individual Interviews, Open Ended Questions and other types of non-numerical data collection techniques yield qualitative findings. These consist of opinions and ideas that are expressed and endorsed with varying degrees of intensity and with varying levels of agreement.

Using observers' notes and reviewing tapes, themes and ideas are collected and organized by topic. The presentation of the findings is an attempt to convey both generally expressed convictions as well as specific ideas relevant to the topic under discussion.⁷

Characteristics of Qualitative Analysis:³

- It begins as soon as data collection begins, and it continues until the project is finished in the eyes of the stakeholder.
- Analyst must be willing to adequately devote the time and other resources to the successful completion of a qualitative analysis process.
- The more skilled people in the process, the better.
- Process must be well defined and repeatable (clear, verifiable, and replicable).
- It is involved and intricate. It involves words, context in which those words were spoken, body language, people who change answers, responses that are sometimes unique and hard to categorize.
- It is fun!

Two approaches to qualitative data analysis:

• **"Scissor and sort."** This method is a technically sound approach to Qualitative Analysis. It is used when extremely detailed and fine-tuned analysis is needed. It receives its name from the process of taking volumes of pages of Qualitative data, coding them by passages, cutting the pages by these coded passages, and then sorting the passages of similar codes into files or envelopes of like code.

This method is expensive in terms of both time and money. It may also lose part of the data if the process involves only reading, coding, cutting and sorting passages, with no listening to transcripts.

The advantages of this method are that it leaves the material mostly intact, and very seldom is anything given only a cursory look. It can also be imaginative as coding schemes are developed.

The "scissor and sort" process:

- (1) Transcribe tapes.
- (2) Edit.
- (3) Code.
- (4) Bracket.
- (5) Dissect transcriptions.
- (6) Group common topics.
- (7) Write connective material.
 - a. Describe purpose of the study
 - b. Major research questions to be answered.
 - c. Description of subjects.
 - d. Description of the qualitative process employed.
 - e. Summary of results.
 - f. Main findings:
 1. First major topic.
 2. Quotes which are relevant.
 3. Summarize and discuss.
 4. (Add interpretations/judgements/recommendations).

• **Integrated.** This is a practical approach to analyzing Qualitative data in the sense that the costly transcription process is eliminated while the real "Quality" of the data is gained through listening and re-listening to tapes recordings of recorded data.

The major disadvantage of this process is that it requires much time during the listening process. It also proceeds better if there is more than one person

involved with the analysis. Since this analysis process requires large blocks of time, scheduling two or more analysts for this purpose may prove to be difficult. Another drawback to some analysts is that it depends largely on the use of a micro-computer and corresponding word processing skills.

The obvious advantages of the Integrated approach to qualitative data analysis is that it adds validity to the process by involving at least two people. Through the use of a word processing program on a micro-computer, the analyst can easily sort and categorize quotes and emerging themes as the dialogue develops on the tape. By listening to tapes, one does not lose the feeling, mood or context in which a statement or reaction was made.

The integrated analysis process:

- (1) Involve more than one person in the analysis process.
- (2) Utilize field notes as a guide to the taped dialogue.
- (3) Listen to tape as a team. Discuss the emerging themes, re-listening if necessary, to gain consensus on what is being said, and to develop categories for themes and trends that emerge.
- (4) Utilize a micro-computer while listening to the tape to record only those relevant quotations, with appropriate headings, and to move passages of similar text to contiguous points in the analysis summary. Such a process greatly reduces the amount of "transcription" necessary, while clarifying what was said, while it is being said.
- (5) In addition to noting and reporting the common themes, keep track of unique responses as well as ideas and insights which arise among the analysts as the process develops. Try to keep track of the environment in which statements were made and the frequency of individual responses. Also try to determine how strongly opinions and ideas are held by the subject(s).
- (6) Group common topics.
- (7) Write connective material.
 - a. Describe purpose of the study.
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Helpful Technology

• **Tape Recorder.** A tape recorder is a necessity in most qualitative data collection where conversations are the primary source of data.

Advantages of tape recorders:

1. Tape recorders capture comments in exact form as they were produced.
2. Recorders do not change what has been said because of misinterpretation or recording words more slowly than spoken.
3. Audio recorders allow the evaluator to be more attentive to the interviewee, instead of taking copious notes.

Disadvantages of tape recorders:

1. Tape recorders break down.
 2. Recorders might inhibit discussion on the part of an interviewee.
 3. Audio recorders do not eliminate the need for taking notes. Notes are needed to formulate new questions and to outline an analysis approach.
 4. Audio recorders do not record non-verbal cues.
- However, the advantages far outweigh the disadvantages. The reason for using the tape recorder should be made clear to the respondent, and the respondent should always be fully aware that his words are being electronically recorded. Reassurance is needed to overcome shyness or the concern that the recorded tape might be used against the interviewee. Never record without permission, and make the request/notification about the recording process early in the contact.

• **Microphones, Recording Equipment and Tapes.** High-quality recordings depend on high-quality equipment. Always make sure the recorder is clean and in good condition. Test its operation at the site before you begin.

Use an outside microphone. The Pressure Zone Microphone (PZM) is an advancement in technology. Anything that the human ear can hear can be accurately picked up by a PZM. With a PZM there is no need for concern over the angle between the source of sound and the mike. The distance between the PZM and the source has no effect on the quality of sound reproduction.

Always take plenty of extra tapes. Do not use more than 90-minute tapes, as 120-minute tapes are prone to break and jam. Before the recording session, use "fast forward" and "rewind" on new tapes to ensure that they do not stick or jam. Always take time to label tapes and place in store safely.

• **Transcribing Tapes and Word Processing.** There is always the issue of complete transcription of audio recorded data. Every audible phrase is considered through a complete transcription process.

However, complete transcription is costly, and much data can be lost, especially considering the reality that most transcribers are not as meticulous as the evaluator. Likewise, even if transcriptions are available, they should never be used without listening and re-listening to the recorded tapes. Printed words sometime take on a completely different connotation when compared to an audio recording coupled with notes of non-verbal cues.

A realistic compromise between complete transcription of tapes and note-taking from listening to tapes is the use of a micro-computer with a word processing package. The analyst/evaluator can listen to a tape, observe his/her notes of the interview session, and type important findings (words, phrases, sentences, etc.) directly onto a monitor.

Word processing packages also exist that allow sorts to be made on coded phrases. The abilities to move text, group common themes, and copy repeated information are also an advantages of word processing.

Computer Software for Qualitative Analysis

The management and analysis of qualitative data has traditionally involved a substantial amount of photocopying, cutting and pasting, and sorting of

coded segments of data into analytically useful and meaningful piles of cards and sheets of paper—a very time-consuming process.

Now computer software⁶ exists that can take over the "cut and paste" procedures while remaining faithful to the underlying method of qualitative analysis. This software makes the mechanical process of qualitative analysis more efficient, greatly enhances the sorting capabilities involving text data, and allows more time for the analyst to do interpretive tasks (*e.g.* identifying meaningful segments of text, comparing segments, revising analytical schemes, and making theoretical sense of the data).

Such software *does not think nor does it analyze data*, but rather reduces the amount of time and energy in handling and manipulating volumes of text.

Qualitative Analysis Issues

- **Coding.** Codes are an attempt by the qualitative analyst to compress volumes of the written word into concise, more manageable terms. It is integral in the process of data reduction and data display of the qualitative analysis process. Attempts are made to develop coding schemes with a limited number of categories.

Advantages of coding include being able to more readily manipulate the data, and to more easily communicate findings.

However, coding schemes are difficult to develop. There is always the reality of losing important information by compressing two or more coding categories into one.

At no time in a coding process of qualitative data should words be converted to numbers. Quantifying qualitative data defeats the purpose of qualitative analysis.

- **"Clean Up" Data or "As Is."** When listening to people talk it is quite evident that almost no one talks in complete sentences or grammatically perfect. Therefore, the issue surfaces during transcription and analysis whether to forge the spoken word into writings that are acceptable. It appears that the best representation of a taped interview are words actually spoken. Any

manipulation, just to make the printed material grammatically correct, may either inject misinterpretation on the part of the analyst, or may not be as accurately received by the user of the evaluation. Therefore, it is recommended that quotes be left "as is."

Traps and Pitfalls

- **Generalizability.** Usually, the results of the qualitative study are obtained from a small sample of subjects who may have been identified by selective means. Therefore, qualitative studies do not lend to generalizing results to populations.

- **Personal bias.** To say the least, qualitative analysis is subjective. Before the qualitative analyst begins, he/she should determine self opinions, conceptions, ideas, etc., so that care can be taken not to "find what is wanted to be found." Evaluators have a responsibility to study themselves, to examine their own predispositions, and to make those predispositions explicit. This will allow them to consider the extent to which their observations and analyses have been distorted by conscious or unconscious predispositions.⁵

- **Speculating causality.** The cardinal principle of qualitative analysis is that causal relationships be clearly emergent from and grounded in the data. The relationship emerges from the data; it is not imposed on it.

Reporting Qualitative Data

The report outline:⁵

- I. Purpose of the evaluation.
 - a. Context of the evaluation.
 - b. Evaluation focus.
- II. Methods decisions.
 - a. Appropriateness of methods
 - b. What design and sampling decisions were made, for what reasons, and with what consequences?
- III. Presentation of the data.
 - a. Descriptive information about the program.

- b. Description of findings organized around evaluation questions, issues, and concerns generated by decision makers and information users.
- c. Analysis of the data.
- d. Interpretations and explanations.

IV. Validation and verification of findings.

- a. Details about actual implementation of methods and reporting on any departures from expected procedures. How was the study done? How were the data actually collected?
- b. Credibility of the findings.

V. Conclusion and recommendations. a. What are the basic findings? b. What are the implications of the findings? c. What are the recommendations?

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