

## Systematic Study of Data Analysis

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**Q**ualitative research describes social phenomena as they occur naturally. It aims at studying real world situation as they unfold naturally without any manipulation and pre determined constraints on outcomes. In this research researcher generate new hypothesis and grounded theory from data collected during field work. Qualitative data are gathered form natural setting which include detailed description, inquire in depth interview and experiences. It is in the form of words, images and categories document.

The analysis of qualitative data requires organizing raw data into logical meaningful categories and examining them in holistic fashion for interpretation to others. The analysis of qualitative data means studying the organized material in order to discover inherent facts. These data are studied from as many angles as possible either to explore the new facts or reinterpreted already known existing facts. The content analysis, inductive analysis and logical analysis are used in analysis of qualitative data.

### Content analysis:

Content analysis is concerned with the classification, organization and comparison. It means documents may be in the form of responses to open ended questionnaire, official record, judicial decision, cumulative record etc.

### Basic ideas of content analysis:

1. Fitting the material into a model of communication: It should be determined on what part of the communication inferences shall be made, to aspects of the communicator (his experiences, opinions feelings), to the situation of text production, to the socio-cultural background, to the text itself or to the effect of the message.
2. Rules of analysis: The material is to be analyzed step by step, following rules of

procedure, devising the material into content analytical units.

3. Categories in the center of analysis: The aspects of text interpretation, following the research questions, are putted into categories, which were carefully founded and revised within the process of analysis.
4. Criteria of reliability and validity: The procedure has the pretension to be inter-subjectively comprehensible, to compare he results with other studies in the sense of triangulation and to carry out checks for reliability. For estimating the inter-coder reliability, we use in qualitative content analysis (in contrary to quantitative content analysis) only trained members of the project team and we reduce the standard of coder agreement.

Content can be analyzed on two levels, manifest level and interpretative level. Manifest level is the basic level of analysis which aims at the descriptive account of data that is what was actual said with nothing read into it. Interpretative level is the latent level of analysis it is concerned with what was meant by the responses, what was inferred or implied. Inductive analysis:

An outline of inductive approach for qualitative data analysis is described and Details provided about the assumptions and procedures used. The purposes for using an inductive approach are to

- (1) To condense extensive and varied raw text data into a brief, summary format;
- (2) To establish clear links between the research objectives and the summary findings derived from the raw data and
- (3) To develop of model or theory about the underlying structure of experiences or processes which are evident in the raw data.

The inductive approach reflects frequently reported patterns used in qualitative data analysis. An

inductive approach provides a convenient and efficient way of analyzing qualitative data for many research purposes. The outcomes of analysis may be indistinguishable from those derived from a grounded theory approach. Many researchers are likely to find using a general inductive approach more straightforward than some of the other traditional approaches to qualitative data analysis.

A general inductive approach for qualitative data analysis explicit label being given to the analysis strategy. The inductive approach is a systematic procedure for analyzing qualitative data where the analysis is guided by specific objectives. The primary purpose of the inductive approach is to allow research findings to emerge from the frequent, dominant or significant themes inherent in raw data, without the restraints imposed by structured methodologies. Key themes are often obscured, reframed or left invisible because of the preconceptions in the data collection and data analysis procedures imposed by deductive data analysis such as those used in experimental and hypothesis testing research.

The following are some of the purposes underlying the development of the general inductive approach. These purposes are similar to other qualitative analysis approaches.

1. To condense extensive and varied raw text data into a brief, summary format.
2. To establish clear links between the research objectives and the summary findings derived from the raw data and to ensure these links are both transparent (able to be demonstrated to others) and defensible (justifiable given the objectives of the research).
3. To develop of model or theory about the underlying structure of experiences or processes which are evident in the text (raw data). Inductive analysis means that pattern, themes and categories of analysis immersed out of the data. In this analysis researcher look for natural variation in the data.

### **Techniques of Qualitative Data Analysis:**

Outlines the different techniques that are shared by most approaches to qualitative data analysis:

1. Documentation of the data and the process of data collection
2. Organization/categorization of the data into concepts
3. Connection of the data to show how one concept may influence another
4. Corroboration/legitimization, by evaluating alternative explanations, disconfirming evidence, and searching for negative cases
5. Representing the account (reporting the findings)

The analysis of qualitative research notes begins in the field, at the time of observation, interviewing, or both, as the researcher identifies problems and concepts that appear likely to help in understanding the situation. Simply reading the notes or transcripts is an important step in the analytic process. Researchers should make frequent notes in the margins to identify important statements and to propose ways of coding the data:

### **Documentation:**

The data for a qualitative study most often are notes jotted down in the field or during an interview—from which the original comments, observations, and feelings are reconstructed—or text transcribed from audiotapes.

The first formal analytical step is documentation. The various contacts, interviews, written documents, and whatever it is that preserves a record of what happened all need to be saved and listed. Documentation is critical to qualitative research for several reasons: It is essential for keeping track of what will be a rapidly growing volume of notes, tapes, and documents; it provides a way of developing and outlining the analytic process; and it encourages ongoing conceptualizing and strategizing about the text.

### **Conceptualization, Coding, and Categorizing:**

Identifying and refining important concepts is a key part of the iterative process of qualitative research. Sometimes, conceptualizing begins with a simple observation that is interpreted directly, “pulled apart,” and then put back together more meaningfully.

The focus in this conceptualization “on the fly” is to provide a detailed description of what was observed and a sense of why that was important.

More often, analytic insights are tested against new observations, the initial statement of problems and concepts is refined, the researcher then collects more data, interacts with the data again, and the process continues.

**Coding:** Most coding requires the analyst to read the data and demarcate segments within it. Each segment is labeled with a “code” – usually a word or short phrase that suggests how the associated data segments inform the research objectives. When coding is complete, the analyst prepares reports via a mix of: summarizing the prevalence of codes, discussing similarities and differences in related codes across distinct original sources/contexts, or comparing the relationship between one or more codes.

Some qualitative data that is highly structured (e.g., open-end responses from surveys or tightly defined interview questions) is typically coded without additional segmenting of the content. In these cases, codes are often applied as a layer on top of the data. Quantitative analysis of these codes is typically the capstone analytical step for this type of qualitative data.

Contemporary qualitative data analyses are sometimes supported by computer programs. These programs do not supplant the interpretive nature of coding but rather are aimed at enhancing the analyst’s efficiency at data storage/retrieval and at applying the codes to the data. Many programs offer efficiencies in editing and revising coding, which allow for work sharing, peer review, and recursive examination of data.

A frequent criticism of coding method is that it seeks to transform qualitative data into “quasi-quantitative” data, thereby draining the data of its variety, richness, and individual character. Analysts respond to this criticism by thoroughly expounding their definitions of codes and linking those codes soundly to the underlying data, therein bringing back some of the richness that might be absent from a mere list of codes.

**References:**

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