UNDERSTANDING THE QUALITATIVE AND QUANTATITIVE METHODS IN THE CONTEXT OF CONTENT ANALYSIS

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Abstract

The content analysis is increasingly employed as a means to facilitate data analysis of researchers in the field of marketing and media studies, to literature, ethnography and cultural studies, gender and age issues, sociology and political science, library, psychology and cognitive science and many other fields of inquiry. First of all this paper discuses of the theoretical background of content analysis; its conceptual and relational analysis. This paper analyses many theoretical considerations which are the main part of the data analysis. It analyses the concept of qualitative and quantitative methods in the content analysis as a data collection and analysis by different researchers in their respective field. It emphasizes in the content of the importance of the theoretical background of the understanding of qualitative and quantitative methods used by the researchers to analyze their data. It also depicts how the qualitative and quantitative data are interrelated and their current-status is highlighted. Again it emphasizes nature of inquiry of qualitative and quantitative in the data analysis; lastly the qualitative and quantitative validity are also sketched in this theoretical knowledge regarding the analysis of data of the respective study. In the concluding part it shows that qualitative and quantitative methods in the context of content analysis is very important is highlighted.

Keywords:
Content analysis; conceptual analysis; Relational analysis; Qualitative content analysis; Quantitative content analysis

1.   Introduction

Content analysis is the analysis of text documents. The analysis can be quantitative, qualitative or both. Researchers quantify and analyze the presence, meanings and relationships of such words and concepts, then make inferences about the messages within the texts, the writer(s), the audience, and even the culture and time of which these are a part. Texts can be defined broadly as books, book chapters, essays, interviews, discussions, newspaper headlines and articles, historical documents, speeches,

conversations, advertising, theater, informal conversation, or really any occurrence of communicative language.

Typically, the major purpose of content analysis is to identify patterns in text. Content analysis is an extremely broad area of research. It includes:

- Thematic analysis of text
- Indexing
- Quantitative descriptive analysis

To conduct a content analysis on any such text, the text is coded, or broken down, into manageable categories on a variety of levels--word, word sense, phrase, sentence, or theme--and then examined using one of content analysis' basic methods: conceptual analysis or relational analysis.

1.2 Conceptual analysis

Conceptual analysis can be thought of as establishing the existence and frequency of concepts – most often represented by words of phrases – in a text. For instance, say you have a hunch that your favorite poet often writes about hunger. With conceptual analysis you can determine how many times words such as "hunger," "hungry," "famished," or "starving" appear in a volume of poems.

Conceptual analysis begins with identifying research questions and choosing a sample or samples. Once chosen, the text must be coded into manageable content categories. The process of coding is basically one of selective reduction. By reducing the text to categories consisting of a word, set of words or phrases, the researcher can focus on, and code for, specific words or patterns that are indicative of the research question.

Once the research question has been established, the researcher must make his/her coding choices with respect to the eight category coding steps indicated by Carley (1992).

1. Decide the level of analysis
2. Decide how many concepts to code for.
3. Decide whether to code for existence or frequency of a concept.
4. Decide on how you will distinguish among concepts.
5. Develop rules for coding your texts.
6. Decide what to do with " irrelevant" information.
7. Code the texts.
8. Analyze your results.

1.3 Relational analysis

Relational analysis seeks to go beyond presence by exploring the relationships between the concepts identified. Relational analysis has also been termed semantic analysis (Palmquist, Carley, & Dale, 1997). In other words, the focus of relational analysis is to

look for semantic, or meaningful, relationships. Individual concepts, in and of themselves, are viewed as having no inherent meaning. Rather, meaning is a product of the relationships among concepts in a text. Carley (1992) asserts that concepts are "ideational kernels;" these kernels can be thought of as symbols which acquire meaning through their connections to other symbols.

The following of the steps (or, perhaps more accurately, strategies) that can be followed to code a text or set of texts during relational analysis.

1. Identify the question.
2. Choose a sample or samples for analysis.
3. Determine the type of analysis
4. Reduce the text to categories and code for words or patterns.
5. Explore the relationships between concepts (strength, sign and direction).
6. Code the relationships.
7. Perform Statistical Analyses.
8. Map out the representations.

The kind of analysis that researchers employ will vary significantly according to their theoretical approach. Key theoretical approaches that inform content analysis include linguistics and cognitive science.

Linguistic approaches to content analysis focus analysis of texts on the level of a linguistic unit, typically single clause units. One example of this type of research is Gottschalk (1975), who developed an automated procedure which analyzes each clause in a text and assigns it a numerical score based on several emotional/psychological scales. Another technique is to code a text grammatically into clauses and parts of speech to establish a matrix representation (Carley, 1990).

Approaches that derive from **cognitive science** include the creation of decision maps and mental models. Decision maps attempt to represent the relationship(s) between ideas, beliefs, attitudes, and information available to an author when making a decision within a text. These relationships can be represented as logical, inferential, causal, sequential, and mathematical relationships. Typically, two of these links are compared in a single study, and are analyzed as networks. For example, Heise (1987) used logical and sequential links to examine symbolic interaction. This methodology is thought of as a more generalized cognitive mapping technique, rather than the more specific mental models approach.

To create the model, a researcher converts a text into a map of concepts and relations; the map is then analyzed on the level of concepts and statements, where a statement consists of two concepts and their relationship. Carley (1990) asserts that this makes possible the comparison of a wide variety of maps, representing multiple sources, implicit and explicit information, as well as socially shared cognitions.

1.4   The process of content analysis

According to Dr. Klaus Krippendorff (1980 and 2004), six questions must be addressed in every content analysis:

1. Which data are analyzed?
2. How are they defined?
3. What is the population from which they are drawn?
4. What is the context relative to which the data are analyzed?
5. What are the boundaries of the analysis?
6. What is the target of the inferences?

1.5   Advantages:

Content analysis is the lone technique suitable for gathering information about what communications contain.
Hence, content analysis is the only appropriate method for answering a great host of research questions.
The efficiency of the content analysis process has been enhanced in recent years with the introduction of (a) large-memory personal computers, (b) scanners that photocopy documents into computers, and (c) optical-character-recognition (OCR) computer software.

1.6   Disadvantages:

-Content analysis can be very time consuming;
-when relational analysis is used to attain a higher level of interpretation, increased
    error comes out;
-it is lack of theoretical base;
-when particularly dealing with complex task, is inherently reductive;
-tends too often to simply consist of word counts;
-often disregards the context that produced the text, as well as the state of things
    after the text is produced;
-can be difficult to computerize.

1.7   Use of content analysis:

Ole Holsti (1969) 15 uses of content analysis into three basic categories:

 -Make inferences about the antecedents of a communication;
- Describe and make inferences about characteristics of a communication;
-Make inferences about the effects of a communication

1.8   Limitations:

Compared with other data-collection methods (questionnaire surveys, paper-pencil testing), content analysis is far more time-consuming and laborious in relation to the amount of information obtained. Furthermore, the accuracy and comprehensiveness of

the results of an analysis are dependent on how well the analyzed documents represent the researcher's field of interest. For instance, conclusions drawn about the incidence of teenage pregnancy will be faulty if they have been derived from the analysis of biased, flawed, or incomplete source materials.

2.   Qualitative content analysis:

Qualitatively, content analysis can involve any kind of analysis where communication content (speech, written text, interviews, images ...) is categorized and classified. In its beginnings, using the first newspapers at the end of 19th century, analysis was done manually by measuring the number of lines and amount of space given a subject. With the rise of common computing facilities like PCs, computer-based methods of analysis are growing in popularity. Answers to open ended questions, newspaper articles, political party manifestoes, medical records or systematic observations in experiments can all be subject to systematic analysis of textual data. By having contents of communication available in form of machine readable texts, the input is analysed for frequencies and coded into categories for building up inferences. Robert Philip Weber (1990) notes: "To make valid inferences from the text, it is important that the classification procedure be reliable in the sense of being consistent: Different people should code the same text in the same way" (p. 12). The validity, inter-coder reliability and intra-coder reliability are subject to intense methodological research efforts over long years (see Krippendorf, 2004).

2.1   Qualitative data

- In-Depth Interviews
- Direct Observation
- Written Documents

2.2   Qualitative Methods

-Participant Observation

-Direct Observation

-Unstructured Interviewing

-Case Studies

-Interviews

3.   Quantatitive content analysis:

Quantitative content analysis starts with word frequencies, space measurements (column centimeters/inches in the case of newspapers), time counts (for radio and television time) and keyword frequencies.
For example,
 Title: Ethnic representations in American History

Textbooks. As a thesis project, a student calculates the amount of attention given to different ethnic groups in three high school American-history textbooks. The data-collection task consists of counting (a) the number of times each ethnic group is mentioned, (b) the amount of space dedicated to the discussion of each group, and (c) how often the mention of each group casts the group in a positive, negative, or neutral light. The student employs computer software that is designed for content analysis in order to ease the burden of surveying the textbooks' contents and to better ensure that the computation of amounts is accurate.

Research employing content analysis often focuses on a single entity, such as one person's life or one town's history or one school's student-conduct regulations. However, other projects assume a comparative form in which the analysis involves searching for likenesses and differences among two or more sets of communications.

4. Qualitative and Quantitative Data

- All qualitative data can be coded quantitatively.
- All quantitative data is based on qualitative judgment.

4.1 Quantitative and qualitative modes of inquiry

Table-I

Quantitative Mode	Qualitative mode
Assumptions - Social facts have an objective reality - Primacy of method - Variables can be identified and relationships measured - Etic (outside's point of view)	**Assumptions** - Reality is socially constructed - Primacy of subject matter - Variables are complex, interwoven, and difficult to measure - Emic (insider's point of view)
Purpose - Generalizability - Prediction - Causal explanations	**Purpose** - Contextualization - Interpretation - Understanding actors' perspectives
Approach - Begins with hypotheses and theories - Manipulation and control - Uses formal instruments	**Approach** - Ends with hypotheses and grounded theory - Emergence and portrayal - Researcher as instrument

• Experimentation • Deductive • Component analysis • Seeks consensus, the norm • Reduces data to numerical indices • Abstract language in write-up	• Naturalistic • Inductive • Searches for patterns • Seeks pluralism, complexity • Makes minor use of numerical indices • Descriptive write-up
Researcher Role • Detachment and impartiality • Objective portrayal	**Researcher Role** • Personal involvement and partiality • Empathic understanding

4.2   Contrasting Positivist and Naturalist Axioms

(Belief and Assumptions)

Table-II

Axioms About	*Positivist Paradigm (Quantitative)*	*Naturalist Paradigm (Qualitative)*
The nature of reality	Reality is single, tangible, and fragmentable.	Realities are multiple, constructed, and holistic.
The relationship of knower to the known	Knower and known are independent, a dualism.	Knower and known are interactive, inseparable.
The possibility of generalization	Time- and context-free generalizations (nomothetic statements) are possible.	Only time- and context-bound working hypotheses (idiographic statements) are possible.
The possibility of causal linkages	There are real causes, temporally precedent to or simultaneous with their effects.	All entities are in a state of mutual simultaneous shaping, so that it is impossible to distinguish causes from effects.
The role of values	Inquiry is value-free.	Inquiry is value-bound.

4.3 Qualitative and quantitative Validity

Guba and Lincoln proposed four criteria for judging the soundness of qualitative research and explicitly offered these as an alternative to more traditional quantitatively-oriented criteria. They felt that their four criteria better reflected the underlying assumptions involved in much qualitative research. Their proposed criteria and the "analogous" quantitative criteria are listed in the table.

Table-III

Traditional Criteria for Judging Quantitative Research	Alternative Criteria for Judging Qualitative Research
internal validity	credibility
external validity	transferability
reliability	dependability
objectivity	confirmability

4.4   The Demise of a Controversy:

Most authors today apparently see qualitative and quantitative approaches as complementary rather than antagonistic.

Quantitative methods are, in general, supported by the positivist or scientific paradigm, which leads us to regard the world as made up of observable, measurable facts. In contrast, qualitative methods are generally supported by the interpretivist paradigm, which portrays a world in which reality is socially constructed, complex, and ever changing… Because the positivist and the interpretivist paradigms rest on different assumptions about the nature of the world, they require different instruments and procedures to find the type of data desired. This does not mean, however, that the positivist never uses interviews nor that the interpretive never uses a survey. They may, but such methods are supplementary, not dominant. Glesne (Peshkin, 1992, pp.8-9.)

The two traditions—(quantitative and qualitative)—appear quite different; indeed they sometimes seem to be at war. Our view is that these differences are mainly ones of style and specific technique….Most research does not fit clearly into one category— qualitative or quantitative—or the other. In the same research project, some data may be collected that is amenable to statistical analysis, while other equally significant information is not… neither quantitative nor qualitative research is superior to the other; … we do not regard quantitative research to be any more scientific than qualitative research. (King, Keohane, & Verba, 1994, p. 5,7)

(Both qualitative and quantitative methods) can be used effectively in the same research project. However, most projects and researchers place their emphasis on one form or another, partly out of conviction, but also because of training and the nature of the problems studied. (Strauss & Corbin, 1990, p.18).

4.5   Present-Status perspective-Qualitative

Qualitative research refers to collecting and interpreting information about some phenomenon without concern for quantities. Qualitative approaches typically involve the analysis of the way a variety of characteristics are patterned, as in the patterning of reciprocal influences among members of an athletic team, of the diverse styles of communication within different families, or of the conflicts among a community's ethnic groups.
Qualitative approaches becomes apparent that there is a good deal of overlapping of the three types—case studies, ethnographies, and experience narratives.

4.6   Recent-Status perspectives-Quantitative

Qualitative perspectives (verbal portrayals of the current status of people and events), Quantitative research methods (the current status of people and events in terms of amounts and frequencies).
Surveys, correlation analyses, and experiments are the quantitative methods.

In concluding part qualitative and quantitative content analysis used as a data analysis in the field of many studies i.e. media studies, case studies, ethnography, libraries, cultural studies, gender and age issues, sociology, political science, psychology, linguistic, and cognitive sciences etc.

5.   References:

Bernard Berelson (1952): Content Analysis in Communication Research.(first
	Edition).Glencoe, III: Free Press 1971.

Carl W. Roberts (1997): Text Analysis for the Social Sciences: Methods for Drawing
	Inferences from Texts and Transcripts. Mahwah, NJ: Lawrence Erlbaum

Norman K. Denzin and Yvonna S. Lincoln. The Sage Handbook of qualitative
	Research (Third Edition). Sage Publications.

Neuendorf, Kimberly A. (2002): The Content Analysis Guidebook Online:
	http://academic.csuohio.edu/kneuendorf/content/

Ole R. Holsti (1969): Content Analysis for the Social Sciences and Humanities. Reading,
	Mass.

Klaus Krippendorff (2004): Content Analysis: An Introduction to Its Methodology.
	2nd edition, Thousand Oaks, CA: Sage.

Thomas, R. Murray (1921): Blending qualitative and quantitative research methods in theses and Dissertations.Sage Publications India Pvt. Ltd.

Uwe Flick. An Introduction to qualitative Research (second edition).Sage Publications.

Uwe Flick and others. A companion to Qualitative research. Sage Publications.