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Content Analysis

A method in Social Science Research¹

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Content Analysis is described as the scientific study of content of communication. It is the study of the content with reference to the meanings, contexts and intentions contained in messages. The term Content Analysis is 75 years old, and Webster's Dictionary of English language listed it since 1961.

In 1952, Bernard Berelson published *Content analysis in Communication Research*, which heralded recognition for the technique as a versatile tool for social science and media researchers. Some scholars adopted it for historical and political research as well (Holsti, 1968). However, the method achieved greater popularity among social science scholars as well as a method of communication research (Wimmer and Dominick, 1994:163). The development of content analysis as a full-fledged scientific method took place during World War II when the U.S. government sponsored a project under the directorship of Harold Lasswell to evaluate enemy propaganda. The resources made available for research and the methodological advances made in the context of the problems studied under the project contributed significantly to the emergence of the methodology in content analysis. One of the out comes of the project, the book entitled *Language of Politics* published in 1940s (Lasswell et. al. 1965), still remains a classic in the field of content analysis. Later on, the method spread to other disciplines (Woodrum, 1984).

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Definition and purpose of Content analysis

Content denotes what is contained and content analysis is the analysis of what is contained in a message. Broadly content analysis may be seen as a method where the content of the message forms the basis for drawing inferences and conclusions about the content (Nachmias and Nachmias, 1976). Further, content analysis falls in the interface of observation and document analysis. It is defined as a method of observation in the sense that instead of asking people to respond to questions, it “takes the communications that people have produced and asks questions of communications” (Kerlinger, 1973). Therefore, it is also considered as an unobtrusive or non-reactive method of social research.

A number of definitions of content analysis are available. According to Berelson (1952) content analysis is a research technique for the objective, systematic, and quantitative description of the manifest content of communication. Holsti (1968) says that it is any technique for making inferences by systematically and objectively identifying specified characteristics of messages. Kerlinger (1986) defined content analysis as a method of studying and analyzing communication in a systematic, objective, and quantitative manner for the purpose of measuring variables.

Krippendorff (1980) defined content analysis as a research technique for making replicable and valid inferences from data to their context. As for Weber (1985) it is a research methodology that utilizes a set of procedures to make valid inferences from text. These inferences are about sender(s) of message, the message itself, or the audience of message. According to Stone, content analysis refers to any procedure for assessing the relative extent to which specified references, attitudes, or themes permeate a given message or document.

A careful examination of the definitions of the method show emphasis placed on aspects such as system, objectivity, quantification, context and validity - with reference to the inferences drawn from the communication content about the sender, the message or the receiver of the message. Thus, content analysis is all about making valid,

replicable and objective inferences about the message on the basis of explicit rules. The material for the content analysis can be letters, diaries, newspaper content, folk songs, short stories, messages of Radio, Television, documents, texts or any symbols.

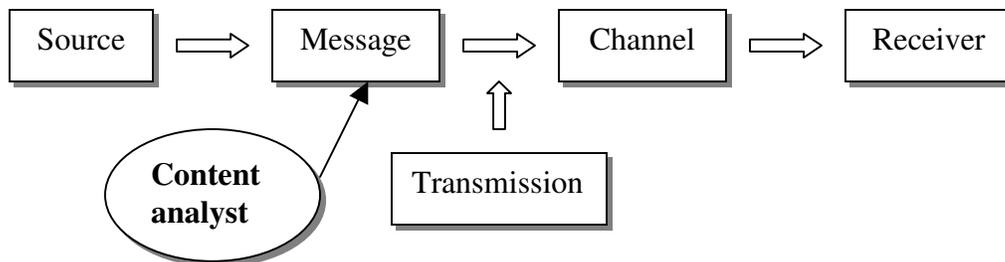
Further, like any other research method, content analysis conforms to three basic principles of scientific method. They are:

1. **Objectivity:** Which means that the analysis is pursued on the basis of explicit rules, which enable different researchers to obtain the same results from the same documents or messages.
2. **Systematic:** The inclusion or exclusion of content is done according to some consistently applied rules where by the possibility of including only materials which support the researcher's ideas – is eliminated.
3. **Generalizability:** The results obtained by the researcher can be applied to other similar situations.

Now, if content of communication forms the material for content analysis, where does a content analyst find himself/herself in the communication process? Figure 1 shows the communication process and where the analyst figures.

Figure 1

Where does content analyst find himself/herself?



As can be seen, the analyst figures at the point of the message, and as Holsti (1968:601) points out, draws inferences about sender(s) of message, characteristics of message itself, or the effects of the communication on the audience – that is the researcher interprets the content so as to reveal something about the nature of the audience or of its effects. Lasswell incorporated these components in his classical formulation:

WHO says WHAT to WHOM with WHAT EFFECT?

Table 1 adopted from Berelson (1952) gives a comprehensive picture of the different uses/applications of the method of content analysis.

Table 1

The Purposes of Content Analysis

Purpose	Questions	Research problems
<i>To describe the characteristics of content</i>	<i>What?</i>	<ul style="list-style-type: none"> ▪ To describe trends in communication content. ▪ To relate known characteristics of sources to the messages they produce. ▪ To check communication content against standards
	<i>How?</i>	<ul style="list-style-type: none"> ▪ To analyze techniques of persuasion ▪ To analyze style
	<i>To whom?</i>	<ul style="list-style-type: none"> ▪ To relate known characteristics of the audience to messages produced for them. ▪ To describe patterns of communication.
<i>To make inferences about the causes of content</i>	<i>Why?</i>	<ul style="list-style-type: none"> ▪ To secure political and military intelligence. ▪ To analyze psychological traits of individuals ▪ To infer aspects of culture and cultural change ▪ To provide legal evidence
	<i>Who?</i>	<ul style="list-style-type: none"> ▪ To answer questions of disputed authorship.
<i>To make inferences about the effect of content</i>	<i>With what effect?</i>	<ul style="list-style-type: none"> ▪ To measure readability ▪ To analyze the flow of information. ▪ To assess responses to Communication.

Uses of Content Analysis

Now, an attempt is made in this section, using some studies as examples, to explain about the applications of content analysis.

Though scholars from various disciplines such as social sciences, communications, psychology, political science, history, and language studies use content analysis, it is most widely used in social science and mass communication research. It has been used broadly to understand a wide range of themes such as social change, cultural symbols, changing trends in the theoretical content of different disciplines, verification of authorship, changes in the mass media content, nature of news coverage of social issues or social problems such as atrocities against women, dowry harassment, social movements, ascertaining trends in propaganda, election issues as reflected in the mass media content, and so on.

One of its most important applications has been to study social phenomenon such as prejudice, discrimination or changing cultural symbols in the communication content. For example, Berelson and Salter (1948) in their classic content analysis study highlighted the media under-representation of minority groups. They studied prejudice – a consistent discrimination against minority groups of Americans - in popular magazine fiction. They content analyzed 198 short stories published in eight of the popular magazines during the period 1937 – 1943 and discussed their findings under the broad categories such as the distribution of characters, their role, appearance, status and their goals which the authors further classified as ‘head’ goals and ‘heart’ goals.

To understand the changing cultural symbols, Taviss (1969) content analyzed popular fiction in the 1900s and the 1950s to test the hypothesis that social alienation had been decreasing in middle class American society, while self-alienation had been increasing. The results indicated, for instance, an overall rise in the appearance of alienation themes, a slight decrease in social alienation and a large increase in self-alienation. Similarly, Lowenthal (1944) in his famous article “Biographies in popular magazines” examined the changing definitions of heroes in popular magazines in the US, and observed a drift away from working professionals and businessmen to entertainers. In

another interesting study, Chai (1978) studied the political conflict in Red China following the death of Mao Tse-Tung in 1976, by analyzing the content of 40 obituary notices – received by the central committee of the Communist Party of China, as it was impossible for American scholars to survey or to observe first hand the Chinese reaction to Mao's death.

One of the most frequent uses of the content analysis is to study the changing trends in the theoretical content and methodological approaches by content analyzing the journal articles of the discipline (Loy, 1979). Using this approach, Vijayalakshmi et al. (1996) analysed a stratified random sample of 194 research articles published in the *Indian Journal of Social Work* from 1971 to 1990 to identify characteristics of authors, and document the trends in empirical content, subject areas, and methodological characteristics such as source of data, research design, sampling, and statistical techniques used in the articles. Similarly, public attitude towards important issues such as civic amenities, unemployment and so on were assessed by analysing the content of editorials or letters to the editor in newspapers (Inkeles et.al, 1952 &1953; Devi Prasad et. al. 1992).

One significant area of its use has been the analysis of newspaper content of the election coverage and editorial treatment to mould the opinion of voters. For example, Devi Prasad et. al.(1991), analyzed the editorials and letters to the editor published in four dailies in India before the 1991 elections to find out the prominent election related themes which figured in the news and direction of their coverage in the respective newspapers.

As a known unobtrusive research method, content analysis is some times used to study sensitive topics to corroborate the findings arrived at by other methods. Devi Prasad (1994) analyzed the dowry-related news items published in three English and six regional language daily newspapers during the period from 1981 to 1988. The news items were analyzed to understand the background of the dowry victim, persons involved in the conflict, possible causes of conflict, nature of victim's abuse and death, and nature of reporting.

Content analysis has also been used to ascertain trends in the communication content of dailies, weeklies, cartoons, and coverage of development news, political news and crime news. Murty (2001) analyzed the news items, letters to the editor, and editorials of four selected dailies in India published during the calendar year of 1995, to make a comparative study of the coverage of development news. Political science researches have used the method to analyze the propaganda devices used by the warring groups (George, 1959; Lasswell et. al., 1965).

Other important applications of the method were systematic analyses of advertisements in newspapers and magazines to draw useful inference on national culture, as well as media preferences of advertisers (Auter and Moore, 1993; Wang, 1996). Similarly, television, radio, and movies offer rich sources of material for content analysis. Many scholars have explored changes in women's roles, sexual behaviour and health, and violence by analysing the content of in television and movie messages (Head, 1952; Lowry, 1989; Olson, 1994).

The above examples throw light on the range and diversity of studies, which made use of the method of content analysis. They also show the variety of messages used to draw inferences about the source, content of the message etc. Though a versatile method, it has its strengths and limitations. An understanding of these will help us use the method effectively.

What content analysis can do?

1. It goes beyond the impressionistic observations about the phenomena and can help you make a quantitative expression about the phenomenon i.e. express it in numbers, in percentages, which will be more specific, and objective.
2. It is an unobtrusive research technique useful to study sensitive research topics.
3. It is context-sensitive and therefore can process symbolic meanings of data. Though predominantly seen as a quantitative method, it can effectively capture qualitative content as well (Stempel, 1989:121). The context-sensitivity of the

method will be useful in articulating the qualitative dimensions such as for example, the direction of coverage of news items as favorable or unfavorable.

4. It is a safe method in the sense that if the researcher found that a portion of the necessary information was missing or incorrectly coded, it is possible to return to the text and supplement the missing data. This is not always possible in experimental or survey research (Woodrum, 1984).
5. It can deal with large volumes of data. Processing may be laborious but of late computers made the job fairly easy.
6. It is a shoestring methodology, which is typically labour-intensive and requires minimum capital investment.

What it cannot do?

1. Its inferences are limited to the content of the text only. Similarly, symbols are processed and coded according to the attribution given by the researcher or coder. There is no guarantee that the sender or receiver shares the same attributed meaning.
2. When it deals with semantic differences or differences in regard to the meanings of words, the findings can be less valid and reliable.
3. It is argued that content analysis which confines itself to counting the individual units and their frequency of occurrence such as for example the number of times the word 'globalisation' appeared, may fail to capture the meaning or significance with which these symbols are used in the texts analyzed.
4. The reliability and validity issues in content analysis still remain unresolved (Krippendorff, 1980)
5. The method cannot be used to test casual relationships between variables (Chadwick, et. al., 1984).

Doing content analysis

Content Analysis begins with a specific statement of the objectives or research questions to be studied. The researcher asks the question ‘what do I want to find out from this communication content’ and frames the objectives for study. The researcher must therefore locate a source of communication relevant to the research question and ask questions that can be solved by content analysis.

The objective of content analysis is to convert recorded “raw” phenomena into data, which can be treated in essentially a scientific manner so that a body of knowledge may be built up. In fact, the researcher who wishes to undertake a study using content analysis must deal with four methodological issues: *selection of units of analysis, developing categories, sampling appropriate content, and checking reliability of coding* (Stempel, 1989).

More specifically studies using content analysis usually involve the following six steps:

1. Formulation of the research question or objectives
2. Selection of communication content and sample
3. Developing content categories
4. Finalizing units of analysis
5. Preparing a coding schedule, pilot testing and checking inter coder reliabilities
6. Analyzing the collected data

In the following pages, I shall explain each step in brief and use an article as an example to relate steps involved in taking up a content analysis study. However, I wish to add a caution that as content analysis is a versatile method, the sample article may reflect only a limited number of the wide range of options practiced in the method at each step.

Formulation of the research questions or objectives

As mentioned earlier, by making a clear statement of the research question or objective, the researcher can ensure that the analysis focuses on those aspects of content, which are relevant for the research. Content analysis is a method for analyzing textual content. Therefore, the selection of topic should be one that can be answered by analyzing the appropriate communication content.

In other words, what is it that we would hope to be able to say about something by analysing the communication content or a body of text? For example, a research question in one study (Devi Prasad & Sampath Kumar, 1991) asked ‘which election issues had figured prominently during 1991 elections in the editorials and letters to the editor of selected dailies and how these dailies differed in terms of the frequency of appearance and the direction of treatment (favourable unfavourable, or neutral) of these issues’. Thus, as with other methods of social research, well-formulated research question or objective can give focus to a study using this method (See Box 1). In the name of frequency of appearance of items or symbols, content analysis should not however fall into the ‘counting for the sake of counting’ syndrome. For simply counting for the purpose of counting will not yield any meaningful results.

Box 1

In his study on dowry-related violence, Devi Prasad (1994) used content analysis to examine the characteristics of dowry-related news:

- To examine the frequency and uniformity of the occurrence of certain characteristics of dowry-related death or abuse.
- To draw inferences of a comparative nature to help understand the nature and variety of dowry cases reported in the newspapers.

Selection of communication content and sample

The next step would be to locate relevant communication content to answer the research question and to determine the time period to be covered. If the body of content is excessive, then a sample needs to be worked out. Though sampling in content analysis is not so much different from sampling in surveys, because of the unique nature of the source material used in this method, there developed some special sampling techniques for content analysis. Thus, depending upon the nature of the communication content – whether it is a new item, editorial, short story or a TV serial – the sampling techniques differ. For instance, the use of *constructed week and consecutive day* sampling to control the bias of cyclical trends in news coverage (Riffe, et al., 1993; Budd & Donohue, 1967), and the use of *basic space unit* approach (Danielson & Mullen, 1965:108-110) to take a sample from large volumes of newspaper content - are some of the examples. Useful advice on some of these

sampling techniques in content analysis is discussed in Budd & Donohue (1967). Murty (2001) used in his study the constructed week and consecutive day sampling and gave a detailed description of the steps involved. A typical description of samples in content analysis specifies a topic area and time period. Thus, the description of the sample for the study on dowry related violence is given in the following Box 2.

Box 2

Method And Sample

The newspapers, when reporting dowry-related news, present a variety of facts about the incident: the background of the victim, persons involved in the conflict, possible causes of conflict, and the nature of victims' abuse or death.

A purposive sample consisting of three English daily newspapers (*Indian Express*, *The Hindu*, and *Deccan Chronicle*), and six regional languages (Telugu) daily newspapers (*Eenadu*, *Andhra Prabha*, *Andhra Jyoti*, *Andhra Bhoomi*, *Udayam* and *Visalandhra*) were selected. The prime consideration in the selection of the newspapers was prominence, as reflected in their circulation and regional representation.

The daily newspapers were surveyed from January 1981 to December 1988. The leading English language daily, *Indian Express*, and the leading regional language (Telugu) daily, *Eenadu*, were taken as the 'base' daily newspapers and all dowry-related news items that appeared during the period were taken from these two daily newspapers.

In order to eliminate duplication, news items from the other dailies were included in the sample only when the *Indian Express* or *Eenadu* did not report these items or did not detail full information about them.

One hundred and twenty-five dowry-related news items were collected and formed the data for analysis. The sample, however, does not indicate the incidence of dowry-related cases either in the various states or in the country as a whole for the period surveyed because it is possible that cases of dowry-related abuse or death might not have been reported in the print media.

Developing content (subject) categories

Content categories can be defined as compartments or "pigeon holes" with explicitly stated boundaries into which the units of content are coded for analysis. They in fact flow from the research question and should be anchored in a review of relevant literature and related studies. Content categories are constructed in response to the

query: What classification would most efficiently yield the data needed to answer the research questions raised?

The first step in category construction is preliminary examination of the communications by the researcher on a small-scale or as a pilot study so that such examination will result in the identification of possible content categories into which material can be coded. Usually one experiments with several categories before finalising a set of categories that can be used for the study. Sometimes, category systems already developed by other researchers may also prove useful for your study.

Developing the category system to classify the body of text is the heart of content analysis. Berelson (1952:147) rightly points out: “Content analysis stands or falls by its categories. Particular studies have been productive to the extent that the categories were clearly formulated and well adapted to the problem and the content”.

To be useful, every content category must be completely and thoroughly defined, indicating what type of material is and is not to be included. Such definitions in most of the cases should be written down before coding begins. These form the operational definitions of categories. According to Chadwick et al., (1984), categories must be mutually exclusive so that a word, a paragraph or a theme belongs in one and only one category. Also, the categories must be exhaustive so that all units examined fit in an appropriate category. Sometimes, a ‘miscellaneous or residual category’ is added for units that occur rarely or are un-codable for other reasons. The content categories developed for the dowry related violence is shown in the Box 3.

Box 3

Content categories developed for the study on dowry related violence

- Victim’s background – age, education and occupation
- Background of the victim’s husband
- Nature and patterns dowry giving
- Duration of marriage at the time of incident
- Location where the incident took place
- Type of abuse/nature of death
- Nature of demands leading to the conflict
- Persons participating in the abuse of the woman
- Types of endings/outcomes
- Reporting the endings/outcomes

Finalizing units of analysis

At this stage, that is, once the categories are identified and defined in terms of the research objectives, the content analyst asks two interrelated questions. They are:

- a. What unit of content is to be selected for classification under the categories? and
- b. What system of enumeration will be used?

Let us begin with the first question. The unit of analysis is the smallest unit of content that is coded into the content category. The units of analysis vary with the nature of data and the purpose of research. Thus, the unit of analysis might be a single word, a letter, a symbol, a theme (a single assertion about one subject), a news story, a short story, a character, an entire article, or an entire film or a piece of programme.

There are two kinds of units of analysis. 1) Recording units, 2) Context units. The *recording unit* is the specific segment of content in which the occurrence of a reference/fact is counted or the unit can be broken down so that reference/facts can be placed in different categories. For example, if it is a single word say 'democracy', the number of times the word appears can be counted. Similarly, a sentence, or a paragraph, a news item or an article containing a symbol or a theme, or a group of facts can also be a unit. Thus, a news item containing a group of facts can be coded in different categories. According to Nachmias & Nachmias, (1976), five major recording units have been used frequently in content analysis research: words or terms, themes, characters, paragraphs and items (p. 135). The 'item' may be an entire book, an article, a speech or the like.

However, for instance, 'attitude toward democracy' cannot be inferred solely on the basis of the frequency with which the word democracy 'appears' in the communication. Here the *context unit* becomes relevant. Thus, the *context unit* is the larger body of content that may be searched to characterize the recording unit (Berelson, 1952). For example, if the coding unit is the word, then the context unit may be the sentence or the paragraph in which the word appears and characterizes the recording unit (See Box 4).

Box 4

Units of Analysis

Four types of news items, *the News Story*, *the Human Interest Story*, *the Editorial*, and *Other* (which includes a news photo or a letter to the editor, that may answer any of the six basic questions that a news story covers) were chosen as units of analysis, as they cover the required information for this study and also deal with facts with the minimum degree of distortion.

Coming to the second question, in content analysis, the counting or quantification of the units is performed by using three methods of enumeration: a) space /time, b) frequency and c) intensity or direction. A unit of analysis can be measured in terms of space (for example, number of column inches) or time (minutes devoted to a news item on the TV). In the case of frequency, it is the number of times a given unit or theme figured in a body of text - is recorded. Intensity or direction implies the measurement of the direction of the symbolic meaning contained in the message. For example, in one study, the authors coded the direction of treatment (as favourable, unfavourable, or neutral) of the role of election commission in the 1991 elections by the editorials in the selected newspapers (Devi Prasad & Sampath Kumar, 1991).

Preparing a coding schedule, pilot testing and checking inter coder reliabilities

Defining categories and preparing coding schedule for the analysis and coding of content are simultaneous steps. A coding schedule resembles a survey questionnaire and contains different dimensions of the communication content to be coded. Next, piloting the coding schedule is a crucial step before launching the full-scale content analysis. Test coding of a small sample of the material to be analyzed helps reveal inconsistencies and inadequacies in the category construction.

Coding the unit of analysis into a content category is called coding. Individuals who do coding are called coders. The coder may be the investigator himself/herself or employed by the investigator. Careful training of coders, which usually results in a more reliable coding, is an essential task in any content analysis. It is probably desirable to have, even in a small-scale study, more than one coder to independently code the units and to check the inter coder reliabilities. Chadwick et al (1984:249)

suggested a method of computing inter coder reliability by calculating a coefficient of reliability. It is calculated by dividing the number of units placed in the same category by the number of units coded.

$$\text{Coefficient of reliability} = \frac{\text{Number of units in the same category}}{\text{Total number of units coded}}$$

Holsti (North et al, 1963) suggested a formula² to arrive at inter coder reliabilities.

$$R = \frac{2(C_{1,2})}{C_1 + C_2}$$

Analyzing the collected data

How should the data be analyzed? The definition of the research problem gives direction to data analysis, the patterns to be examined, and the relationships to be explored. As in the case of analysis of survey data, the starting point can be the description of the profile of the main categories such as for example characteristics and types of content by period, actors, and so on. Later, the analysis can move to conduct

<i>Method</i>	<i>Percentage</i>
Pouring kerosene and setting fire to her	46.3
Poisoning	14.6
Beating to death	9.8
Strangling	7.2
Beheading	2.5
Drowning	2.5
Not mentioned	17.1
n = 41	100.0

²Where $C_{1,2}$ is the number of category assignments both coders agree on, and $C_1 + C_2$ is the total of category assignments arrived at by both coders.

more complex analyses comparing two or more dimensions, periods or data sets. Tables- univariate and bivariate - can be prepared and cross tabulations can be arrived at. Depending on the nature of data, the statistical principles that apply to other areas of survey research will also apply to content studies with a very few differences (Stemple, 1989:132). The findings can be presented forcefully even with simple percentages and cross tables. Tables 2 and 3 from the sample article on dowry related violence are shown here. In one case, in Table 3, the death occurred in a place close to the couple's residence where the husband, a police constable, murdered his wife and threw her body into the river.

Table 3				
<i>Distribution Showing the Types of Ending by Where it Occurred</i>				
(in percentage)				
<i>Location</i>	<i>Suicide</i>	<i>Murder</i>	<i>Death under suspicious circumstances</i>	<i>Abuse</i>
In-laws' place	25.6	27.2	9.6	20.0
Couple's place	4.8	4.0	0.8	3.2
Parent's place	1.6	-	0.8	-
Elsewhere	-	1.6	-	0.8
N = 125	32.0	32.8	11.2	24.0

One important development in content analysis is the use of computers in data analysis. Computer programmes like the "General Inquirer" can identify within a body of text, those words and phrases that belong to specified categories (Stone et al., 1996). However, when text must be searched for ideas or themes, or when coding 'contexts units' with an eye for, let us say, ascertaining direction of treatment – then human coders are more sensitive than computers. Other more popular programmes such as SPSS, Atlas *ti*, QSR NUDIST, Minitab etc., are useful in assisting analysis of both quantitative as well as qualitative data generated through the method.

To sum up, content analysis is a useful research technique for analyzing large bodies of text. It offers objective guidelines in the coding of the text and to draw inferences from the data. It helps in the coding of the text according to systematic and objective rules and in drawing inferences from the data. A successful content analysis study is the outcome of a series of good decisions. The process starts from the point of deciding whether the method is suitable to study the research topic under question. After clearly setting out the objectives of the study, the researcher proceeds to make decisions relating to units of analysis, developing content categories, sample and the sampling period. Orienting coders, checking inter coder reliabilities and selecting appropriate statistical designs for presenting results are some of the essential tasks, which add rigor to the study.

Content analysis has its limitations. What it does not tell us is about causal connections between variables under study. For example, it is good at capturing the changing trends in the subject content of professional articles published in a journal (Loy, 1979). But it cannot answer why there were changes in the subject content. Further, though a popular research method both in the Social sciences and Mass communications, it is still used as a technique to supplement the findings of mainstream research designs such as survey research. Woodrum (1984) rightly argues that “content analysis remains an under utilized research method with great potential for studying beliefs, organizations, attitudes and human relations. The limited application and development of content analysis is due more to unfamiliarity with the method and to its historic isolation from main stream social science than to its inherent limitations”.

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* For further reading.

Content analysis is a research method for studying documents and communication artifacts, which can be texts of various formats, pictures, audio or video. Social scientists use content analysis to quantify patterns in communication, in a replicable and systematic manner.[1] One of the key advantage of this research method is to analyse social phenomena in a non-invasive way, in contrast to simulating social experiences or collecting survey answers. Qualitative Analysis of Content. by Yan Zhang and Barbara M. Wildemuth. If there were only one truth, you couldn't paint a hundred canvases on the same theme. --Pablo Picasso, 1966. As one of today's most extensively employed analytical tools, content analysis has been used fruitfully in a wide variety of research applications in information and library science (ILS) (Allen & Reser, 1990). Similar to other fields, content analysis has been primarily used in ILS as a quantitative research method until recent decades.