

Tips & Tools #7

Content Analysis A Method for Analyzing Qualitative Data

This tipsheet provides guidance on using content analysis to analyze qualitative data. Qualitative data are in the form of words, such as the spoken information collected during focus groups or key informant interviews, written responses to open-ended questions in written surveys, or staff reports prepared for city council meetings. (For further discussion about qualitative evaluation methods, see *Tips & Tools #5 – Using Qualitative Methods in Tobacco Control Program Evaluation.*)

■ **What is content analysis?**

- No matter what method you are using to collect your qualitative data, if you want your evaluation findings to be credible and useful, you need to analyze your data systematically. Content analysis is a systematic approach to analyzing qualitative data. Focus groups, key informant interviews, and other qualitative data collection methods can create pages and pages of information. Content analysis is a way to distill the information into categories (sometimes referred to as “themes”) that will help you make sense of the data.

■ **What are the steps in content analysis?**

- Read and re-read your data (focus group transcripts, interview write-ups, etc.) until you are familiar with the content.
- Organize your data. For example, if you have several interviews, you might organize the data by question.
- Code or place your data into categories or theme. Categories should be:
 - Exhaustive – Create enough categories to accommodate each important piece of data. You may need to add one or more categories as you work through the data, or have an “other” category.
 - Mutually exclusive – No item should be placed in more than one category.
 - Clearly specified – someone not directly involved in the development of the categories should be able to understand why an item is coded one way instead of another.
- Review and revise your coding system
- Look for patterns across categories or themes
 - Do themes change over time?
 - Are themes different in different settings or for different kinds of people?
- Summarize findings, recognizing limitations of the data (such as key informant interview respondents who only represent one side of an issue).

Example #1: Content Analysis of Focus Group Data

Project objective: A project has an objective of increasing the number of families with children in Head Start reporting that smoking is not permitted in their homes and vehicles by 20% over the baseline.

Process data collection activity: Focus groups with parents and guardians of children in Head Start

Discussion topics: Family beliefs and opinions about smoking around children, barriers to banning smoking in their homes and vehicles, and recommendations for overcoming the barriers

Number of focus groups: 2

What the focus group data looked like: The focus groups were tape recorded and the tapes were transcribed. The data consisted of two 10 page verbatim transcripts of the focus group discussions. The data collected during both focus groups was analyzed together as one data set.

How the project evaluator (“Mr. Jones”) applied content analysis:

- First, Mr. Jones read both focus group transcripts carefully, keeping in mind the categories – **beliefs/opinions, barriers, and recommendations** – that were covered in the focus group. While he was reading, he made lists of the kinds of beliefs/opinions, barriers, and resources that were mentioned in the focus group discussion. For example, when one of the focus group participants talked about how her grandparents and her parents had always smoked in the house, he added “family tradition,” to the list of barriers. In this case, **Barrier** is the category and “family tradition” is the code used to identify the specific barrier.
 - Sometimes codes will be related, even though they are in different categories. For example, if the focus group participants talked about how their elders had smoked in the house because they did not know about the bad effects of secondhand smoke, Mr. Jones might add “lack of knowledge” to the **Barrier** category. Later, he might find that the focus group participants recommend educational materials as a potentially useful resource. At that point, he would add “educational materials” to the **Recommendation** category.
 - Although Mr. Jones started with the three categories that were used to organize the focus group interview questions, in his reading he discovered that he needed a new category, which he called **Existing Family Policies**.
- Then, Mr. Jones read the focus group transcripts again to double-check his codes and make sure they were exhaustive (described all the important data) and mutually exclusive (every quote had only one code). He also asked one of the project staff to use his code list to analyze one of the transcripts to test whether the codes were clear. Since the project staff person coded the transcript the same way he had, Mr. Jones felt confident that he had not biased the analysis.
- At this point, Mr. Jones organized the results into tables. For example, one table listed the **Beliefs/Opinions** codes with quotes from the transcripts to illustrate each code. Another table made linkages between the **Barriers** and **Recommendations** codes (see below).

Example 1: Sample table linking **Barriers** and **Recommendations**

Barriers	Participant Recommendations
Lack of knowledge	Put educational materials on DVDs
Family tradition	Ask respected community elders (such as Pastors) to communicate with family elders

- Mr. Jones wrote a short narrative report to discuss some of the issues in the data. For example, he identified those barriers that seemed to be most central in the focus group discussions and those that seemed to be an issue for only one or two of the participants. However, since focus group participants are not necessarily representative of the overall target population, issues that were not central in the focus group discussion could still be very important in the group that is the project’s target for the intervention

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Example #2: Content Analysis of Key Informant Interview Data

Project objective: A project has an objective of having at least two cities adopt and implement a policy banning smoking at their local fairs.

Process data collection activity: Key informant interviews, conducted at the end of the project by telephone, with 8 members of the two local Fair Boards (4 Board members in each city). Interview topics: (1) the key informants' opinions about the policy at the beginning of the project, (2) their reasons for those opinions, (3) their perceptions of the strengths and weaknesses of the intervention, (4) how they voted on the proposed policy, and (5) the reasons for their vote, for or against.

What the key informant interview data looked like: The project staff conducting the interviews took notes, summarizing the responses of the Fair Board members and, where possible, including exact quotes. When the interview was over, the staff who conducted the interviews wrote up their notes. The data consisted of eight sets of interview notes, each two to three pages.

How the project evaluator ("Ms. Smith") conducted the content analysis:

- First, for each city, Ms. Smith made a table with the major topics across the top row and the respondents listed down the first column. The table for each of the cities looked something like this:

ID#	Initial opinion + Reasons	Intervention Strengths	Intervention Weaknesses	Vote + Reasons
KI#1	<u>Pro:</u> <ul style="list-style-type: none">– Not a smoker– Has small children– Knows harmful effects of SHS	<ul style="list-style-type: none">– Information about other cities with smoke-free fairs– Public opinion data showing support	Sample policy provided didn't fit their situation	<u>Pro:</u> Same as before
KI#2	<u>Con:</u> <ul style="list-style-type: none">– Doesn't believe in regulating everything– Thought that "SHS isn't a big deal when people are outdoors"	<ul style="list-style-type: none">– Public opinion data showing that even smokers support a ban on smoking at the fair– Educational materials about effects of SHS on children even when the smoking is outdoors	Wanted a sample policy that had some flexibility: "Why not just make the children's areas smoke-free?"	<u>Con:</u> Wanted a policy that didn't cover the whole fair
...etc.				

- Then, Ms. Smith compared the results for the two cities. She wanted to know if there were differences in the strengths and weaknesses of the intervention by city. For example, was the sample policy considered a weakness in one city but not the other? If so, then maybe the project should spend more time tailoring sample policies to individual cities in the future.
- Ms. Smith also looked at all the informants who were initially "Pro" in order to find out the reasons for their positive perspective and also to learn if any changed their perspective to "Con" at the end of the project. The Fair Board members who went from positive to negative on the policy are particularly important because their information might point to aspects of the intervention that actually turned them against the policy. If, during the interviews, some new argument came up against the policy that project staff hadn't already considered, that argument might be particularly important for the project to address up-front in the future.
- Ms. Smith then compared the people who voted "Con" to those who voted "Pro." The data shown in the matrix indicate that even though they voted differently, KI#1 and KI#2 had similar perceptions about two elements of the project: Both identified the public opinion data as a strength, and both identified the sample policy as a weakness. When informants with different perspectives on the issue identify similar strengths and weaknesses, the project has stronger evidence that these really are strengths and weaknesses of the project.
- With this analysis, Ms. Smith was able to provide more than a list of strengths and weaknesses of the project. Information on what strategies seemed to work best in each of the two cities and for which kinds of Fair Board members will not only help the staff analyze the effectiveness of their intervention activities in this project, it will also help them plan more effective interventions in the future.

■ What are key decisions in content analysis?

- How will you come up with your categories or themes? A common source is the data collection instrument that you used to gather the data. But it is important to be open to themes that emerge from the data, even though they were not asked about specifically.
- How will you make sure the categories and codes are clearly specified and can be systematically applied to the data? Ideally, you will have more than one person coding the data. The extent to which they give the same data the same codes is a measure of the reliability of the results. If the level of agreement is poor, further discussion about the coding system is warranted to increase the reliability of the results.
- When would you combine data into a single dataset? In each of the above examples, the data (focus group transcripts in Example #1 and interview write-ups in Example #2) were analyzed as a single dataset because the same kind of information was being collected from the same kinds of people. When you do not want to make comparisons of either topics or participants, it makes sense to combine the data into a single dataset.
- When would you analyze multiple data as separate datasets? When you want to compare either topics or data sources, you would analyze the data separately. Imagine that the focus groups in Example #1 (above) included different kinds of respondents (i.e., different data sources), such as Head Start staff in one focus group and Head Start parents and guardians in the other focus group. In this case, you could analyze the transcripts separately in order to learn if the perspectives of the staff differ from that of the parents/guardians. As an illustration of a comparison of data topics, imagine that the project in Example #2 did two waves of key informant interviews (one before the intervention activities and one after). In this case, the pre-intervention interview data could be analyzed separately from the post-intervention interview data in order to examine how the perspectives of the informants had changed.
- How will you report the results of your analysis? Example #1 above gives some ideas about how to report the results of content analysis, such as in tables with quotes to illustrate the codes or in tables that link codes from two different categories together. In general, it is best to use some kind of list or table to summarize the results, using text only to go into important details or to discuss nuances in the findings.

See www.tobaccoeval.ucdavis.edu for more *Tips & Tools*

#1 - How to Choose the Best Data Collection Method for Your Project

#2 - Writing & Organizing Interview Questions

#3 - Conducting the Interview

#4 - Focus Group Interviews

#5 - Using Qualitative Methods in Tobacco Control Program Evaluation

#6 - Using Public Records as an Evaluation Data Source