

Session 6.4: Notes

Qualitative Data Analysis

Contents

1. Organising qualitative data
2. The framework approach
3. Identifying themes
4. Interpreting trends and patterns
5. Triangulation and validity

Learning Objective

After completing this session, you will be able to:

- Record qualitative data from participatory appraisal exercises, focus group discussions and semi-structured interviews in a systematic and meaningful way
- Draw out themes and concepts using a framework approach that enables comprehensive analysis of qualitative datasets

1 Organising Qualitative Data

Almost all qualitative research studies involve some degree of transcription – the data may be tape recorded interviews, focus groups, video recordings, or handwritten field notes. It is not appropriate, usually, to write up summary notes from a tape recording – unless the words are transcribed verbatim, the researcher is likely to bias the transcription by only including those sections that seem relevant or interesting to them. Many researchers would also include some non-verbal cues in the transcript - silence may communicate embarrassment or emotional distress, or simply a pause for thought. Laughter or gestures may also give added meaning to the spoken word.

If someone else is transcribing your material, it is important to tell them how much of this non-verbal matter to include. If you have never transcribed material, it is a useful exercise to do a little yourself.

After transcription, it is necessary to organise your data into easily retrievable sections. You may wish to give each interview a number or code, or to break up field notes into sections identified by date, or by context. Interviewees will need to be given pseudonyms or referred to by a code number. A secure file will be needed that links pseudonyms and code numbers to the original informants, but as with any research this file is confidential and would usually be destroyed after completion of the project. Similarly names and other identifiable material should be removed from the transcripts.

Narrative data needs to be numbered using line or paragraph numbers, so that any unit of text you use can be traced back to its original context. If you are using a software package to do the analysis, this may be done for you automatically by the computer, but you may need to decide upon your unit of analysis – whether you wish each word, each line, each sentence or each paragraph to be numbered. If you are working with 'hard' copies (i.e. type or hand written sheets) you would be well advised to make several copies of each at this point, to avoid losing data when the analysis stages begin. Similarly word processed files should be backed up and stored independently.

Computer Assisted Qualitative Data Analysis Software (CAQDAS) is available to carry out analysis of large qualitative data sets. There are a number of software packages on the market that provide a structure to the data and have search functions to identify key themes. Some of the more popular packages include Nudist, Atlas/ti, WinMAX, ETHNOGRAPH and NVivo.

Warning! CAQDAS should only be used as 'analytic support' to aid the process of analysis and not as a replacement for the intellectual role that is required of the researcher.

2 The Framework Approach

Framework Analysis has 5 key stages. These can be undertaken in a linear fashion and therefore all data can be collected before analysis begins, although framework analysis can equally be used when data collection and analysis occur concurrently.

Key stages of Framework Analysis:

1. Familiarisation
 2. Identifying a thematic framework
 3. Indexing
 4. Charting
 5. Mapping and Interpretation
- **Familiarisation:** whole or partial transcription and reading of the data.
 - **Identifying a thematic framework:** this is the initial coding framework which is developed both from existing issues and from emerging issues from the familiarisation stage. This thematic framework should be developed and refined during subsequent stages.
 - **Indexing:** the process of applying the thematic framework to the data, using numerical or textual codes to identify specific pieces of data which correspond to differing themes (this is more commonly called **coding** in other qualitative analysis approaches).
 - **Charting:** using headings from the thematic framework to create charts of your data so that you can easily read across the whole dataset. Charts can be either *thematic* for each theme across all respondents (cases) or *by case* for each respondent across all themes.

Examples:

Thematic Chart

	Case 1	Case 2	Case 3
Theme			

Case Chart

	Theme 1	Theme 2	Theme 3
Case			

In the chart boxes, you could put line and page references to relevant passages in the interview / focus group transcripts. You might also want to include some text, for example key words or shortened quotations as a reminder of what is being referred to and to highlight anecdotal evidence and verbatim remarks.

- **Mapping and Interpretation:** this means searching for patterns, associations, concepts, and explanations in your data, aided by visual displays and plots. This will aim to define concepts, map the range and nature of the data, create typologies, find associations within the data, provide explanations or develop strategies. The focus will depend both on the themes that have emerged from the data and the original research question.

3 Identifying Themes

After familiarisation with the material, some preliminary coding is required which serves to begin the process of categorising and analysing the data. Under the framework analysis there may be existing concepts that can be used as codes, and the data could be searched for material that can be coded under these headings.

It is important to read and re-read the interview transcripts and any field notes taken as part of focus group discussions or participatory appraisal exercises to get an overall understanding of the responses and draw out some broad themes.

Examples of 'top-level' themes:

- Access to healthcare
- Access to education
- Access to agricultural marketing
- Access to domestic activities
- Transport constraints

Examples of sub-themes:

- Frequency
- Distance
- Cost of transport service
- Gender/age split of respondent

There is merit in using highlighters and different coloured index tabs to apply colour coding or themes to all the raw data (field notes and transcripts etc).

It may be necessary to engage in re-coding to develop more, well defined categories once these initial themes have been identified. This process would continue ideally until 'saturation' is reached i.e. no new theme are emerging, and theoretical ideas are tested satisfactorily.

The use of flow charts, diagrams, tables and other visual means to support analysis can be used to 'map' the themes and help interpret the data.

4 Interpreting Trends and Patterns

The next step within the framework approach is to use the index, and the learning gained through indexing, to construct a set of thematic matrices or charts. Here each main theme and its associated sub-topics are plotted on a separate thematic chart.

Thus, the number of thematic charts will be dictated by the number of main themes the study presents. Each case or respondent is allocated a row in the matrix, while each sub-topic is displayed in a separate column.

It is useful practice to reserve a blank column at the end of a thematic chart to pick up further emergent themes and as a place where the analyst can make remarks and insert any verbatim quotes.

Table 1 demonstrates how participatory appraisal data can be recorded and analysed by theme in a chart created in Excel. This particular sample shows information from participants about travel for agricultural marketing, including the frequency, distance and cost of rural transport services in the Copperbelt Province of Zambia. The comments include direct quotations from participants and the chart also indicates the gender split of respondents.

Table 1: Zambia, Copperbelt Province – Agricultural Marketing

Village	Frequency	Distance	Cost of Service	Gender split	Comments
Chinondo	Lusaka: sweet pots annually. Nyenyenzi/Mishikishi: maize/sorghum mon & thurs Ibenga: veg daily	to Masaiti: 22km to Mishikishi: 28km to Ibenga: 18km	Chinondo-Masaiti/ Mishikishi: k1,000 o/w. k2,500 on rtn b/c produce already sold. Minibus to Luanshya: k2,000 o/w Lusaka: van: k1,500 per 25kg truck: k2,000 " Ibenga-Luanshya: k2-2,500/person k1,500/25kg bag		Large storage sheds located along Ibenga-Mishikishi Rd & @ Chinondo, but have been vacant since 1988 b/c Govt stopped providing agric inputs. Sheds lie empty, not even used for storage. ('white elephants')
				men	People do not have enough food b/c no ferts: "We are not talking about credit for fertilisers, if they just brought ferts here, those w. money would be able to buy" Produce is sold @ Ibenga b/c close, but only locals buy so receive only low prices. The best price is @ Nyenyenzi Elderly were more emphatic on issue of lack of ferts. For livelihoods to improve - required fertiliser "The barter system is killing us b/c you don't realise cash".
				women	Most people grow maize w/out ferts. Those w. good harvests take produce to Mishikishi & Nyenyenzi by bike. cassava is consumed, not sold. "Transporters make a lot of excuses. They say: our place is far, the road is bad. In the long run our produce or merchandise just goes to waste." Cost of transport is prohibitive. Once costs deducted - no profit! Lack of market structure is not prob. Even if local market, who would buy produce? Locals would only pay low price. - realistic view that market has to come w. road network & transport. Women also involved in beer brewing, men in charcoal production but insignificant & labour intensive - returns are v. poor.
Mboyonga		to Masaiti: 27km to Ibenga: 23km		men	There is no market infrastructure or consumer outlets. To access ferts, have to travel to Luanshya & hire truck for k200,000. By foot/bike, must travel more frequently.

					<p>A consumer shop would support production b/c sell to shop. Those who secure credit, find it diff to repay b/c no capacity to repay. Many sell at road side (Kabwe-Ndola rd) but not much demand from passing traffic.</p> <p>1973-80: NAMBOARD (National Agric Marketing Board) bought maize & ZAMHORT (Zambia Horticultural Prods) bought veg from producers. Now defunct.</p> <p>1980s: Provincial coop unions emerged to supply inputs & purchase produce. No longer.</p> <p>1985-90: Only paid up members of coop unions got ferts.</p> <p>1990-2000: Private agents supplied inputs. Benefit few.</p>
				women	<p>When travel to market done by men - bicycle, when women - foot (inequity in modal use).</p> <p>Poor: food insecurity, only get food through piecework, poor clothing, only 1 chitenge, dirty, doesn't travel to market/outside village.</p> <p>Wealthy: lives & eats well x3/day, change of clothes, spare cash (k100-500,000)</p> <p>Crops which don't require ferts don't fetch good price esp as grow small quantities - need big field to get meaningful yield & to produce surplus for spare cash.</p> <p>Non-agric income: inc knitting babywear, beer brewing (sweet beer - munkoyo), charcoal prod, gardening.</p>
Masaiti Gen					<p>Masaiti is v. static, no major developments.</p> <p>Every wk, receive retirees from mines, turned farmers.</p> <p>Market days are Luanshya: thurs, Mishikishi mon, Ibenga mon & thurs.</p> <p>Transporter @ Ibenga: receives credit from Koloko Trust & Omnia fert agent. They pay 25% interest & hire oxen for k5,000/day. Repayment after harvest. Loans are obtained in a coop who collect ferts. Repayments are individual. - Restricted b/c Govt only allowed credit for ferts enough for 2ha land.</p> <p>Nyenyenzi is the preferred market b/c good price, but road not improved to Nyenyenzi</p>

Source: Davis (2005)

Table 2 shows another example of qualitative data reporting from a case study in the Northern Province of Zambia. Here respondents from a well-connected rural and remote rural village were asked to rate the importance or severity of the phenomenon that they are reporting, in this case the extent to which the transport intervention was a catalyst for social impact (both benefits and disbenefits) on the community.

Table 2: Focus group data on social impact of transport interventions

Group	Kawama (well connected)			Makangila (remote)		
	Advantage	Disadvantage	Score*	Advantage	Disadvantage	Score
Adult men	Trips to places e.g. trading places have reduced, able to travel out of the village and back the same day	Too much dust on the road causing environmental problems	4	Trading has become easy	Has opened access to the area for thieves	2
Adult women	Women are able to use bicycles to get to various places.	Women cyclists are vulnerable when they meet male cyclists	8	Find it safe now to travel on the road	non availability of public transport in the area	2
Male youth	The road has provided access to other villages where they go to look for employment	They tend to over speed causing accidents	5	Are now confident to travel to town either walking or riding	A lot of accidents with bicycles	-3
Female youth	Road has improved access to the market where they go to buy vegetables and other food	Forced to walk to such places due to traffic congestion (bicycle) on the road	6	The road has made them more secure to travel to social places on their own	The road has made them to be more outgoing	-2
Male children	They are able to go to school on their own because the road is now open and safe.	They play on the road and hence are involved in accidents	5	No impact	No impact	0
Female children	They go to school on their own	Play in the road and cause accidents	4	No impact	No impact	0

* +10 very positive advantages to -10 very negative disadvantages

The scale used was from +10 for very positive advantages to -10 for very negative disadvantages. The scores obtained from tables generated by the survey questionnaires and focus group discussions, as shown in Table 2, can be averaged across the survey sample to indicate overall 'preference' by the community, disaggregated by gender, age and income. It is important that interpretation of the scores include feedback from the community, to explain their reasons for the score given.

5 Triangulation and Validity

Validity will be judged by the extent to which an account seems to fairly and accurately represent the data collected. In terms of presenting the analysis then, reflection is required on:

- The impact of your research design and approach to analysis on the results you present.
- The consistency of your findings, for example has analysis been undertaken by more than one researcher and has data collection been consistent and reliable.
- The extent to which you represented all relevant views, for example checking for 'negative' or deviant cases to test your interpretations.
- Adequate and systematic use of the original data (for example using quotations, and not all from the same person!) in the presentation of your analysis so that readers are convinced that your interpretations relate to the data gathered.

Triangulation

Evidence that the qualitative researcher has undertaken 'triangulation' is frequently seen as demonstrating rigour.

Triangulation means gathering and analysing data from more than one source to gain a fuller perspective on the situation you are investigating. This may be more or less important, or possible, depending on your research question and setting. Triangulated data should not be simply used to 'check' the conclusions from one data source against another. Often the data from one source will contradict or question the findings from another.

This is not necessarily a failure of the research in itself, as 'real' life research situations are inevitably complex. Indeed a key strength of triangulation is the possibility of uncovering this complexity and of finding different views. The contradictions and differences within the data collected should spur the researcher on to further analysis, and sometimes, to further investigation until some 'sense' can be made of what is happening. Evidence that the analyst has used triangulation in this way and has effectively drawn the analysis of different forms of data together demonstrates rigour, rather than simply the use of different sources.

Respondent Validation

Qualitative researchers frequently feedback the findings from their research to their participants in some way. The range of feedback to respondents varies. In some cases transcripts or quotations may be sent back simply to check accuracy or consent for use, in other cases respondents may be asked to comment on the interpretation or drafts of the report. Feedback to respondents has been seen as important in involving participants in the research process and, for some critical social scientists, in addressing

concerns about the researcher having sole power of interpretation. Many funders and reviewers consider 'respondent validation' of qualitative research to be a mark of quality, and evidence of respondent validation' of findings is increasingly seen as a way of demonstrating rigour.

However, the decision to involve respondents in feedback or validation may legitimately vary from study to study. It might be more helpful in terms of assessing rigour to concentrate on evidence that the researchers have:

- Considered the issue of feedback to respondents
- Provided reasons for their decision to provide feedback or not
- Explained how they have gone about any feedback, the type of feedback provided, and why
- Explained how any feedback from respondents has been used in the analysis and interpretation.

Respondent feedback generates important issues for the analyst to consider, not least what to do about competing interpretations. It is important to consider that, for reasons of confidentiality, individual respondents may not have access to the full range of views that the researcher has found; that respondents may have competing perspectives (for example, transport service users and operators may view the same situation differently); and that they may have particular personal, professional or political reasons for disliking the researchers' interpretations, however legitimate these interpretations may be. It is important to consider how far it is the researchers' job to question 'taken for granted' assumptions or particular views, even when this may be unpopular with some respondents.

6 Further Reading

Bazeley, P. (2007). *Qualitative Data Analysis with NVivo*. London: Sage Publications

Davis, A. 2005. *Relationships Between Transport, Mobility, Sustainable Livelihoods and Social Capital for Poverty Reduction*. Unpublished PhD thesis, University of Wolverhampton.

De Vaus, D. (2002). *Surveys in Social Research (5th Edition)*. London: Routledge

Kitchin, R. and Tate, N. J. (2000). *Conducting Research in Human Geography*. Harlow: Pearson Education Limited

Laws, S. Harper, C. and Marcus, R. (2003). *Research for Development: a Practical Guide*. London: Sage Publications

Mikkelsen, B. (1995). *Methods for Development Work and Research: a guide for Practitioners*. London: Sage Publications

Ritchie, J. and Lewis, J. (2003). *Qualitative Research Practice*. London: Sage Publications

Seale, C. (2004). *Researching Society and Culture (2nd Edition)*. London: Sage Publications

TRL (2004) *A Guide to Pro-Poor Transport Appraisal: the Inclusion of Social Benefits in Road Investment Appraisal*. Overseas Road Note 22. Crowthorne: TRL Limited