

ANALYSING DIFFERENT TYPES OF DATA

Analysing interview data

The first process in analysing interview data is often to complete a written transcript, to get the words down on paper. It can be difficult to attempt to work directly from audio or video recordings, but the time taken for transcription can be considerable; typically ten times the length of the interview!

Each interview is then broken down into units of information, reducing its content to a series of single concepts. Sometimes literally cutting up the manuscript. The response to a single question may consist of one or more units, depending on how the interviewee develops their answer. This process is more straightforward for structured interviews where the interviewer has more influence on the topics covered.

These units are then sorted into categories depending on the nature of their content, so that responses are then grouped by content rather than interviewee, though their source needs to be clear.

Categories may be constructed before the analysis begins (deductive) or arise from the process of analysis (inductive). Interview analysis is often an iterative process, revisiting statements as themes and trends are identified.

The various units within each category are then compared, contrasted and patterns identified. Categories may be redefined several times during the analysis process as conflicting responses are considered.

Once all of the data has been categorised, the themes in relation to the research question are discussed and conclusions developed.

On occasions the reduction of interviews into units of data can lead to loss of some essential content, in terms of overall context within which statements were made. When themes have been identified, it may be enlightening to review interviews where the identified theme was not present in order to determine what replaced it.

For information on analysing research interviews, read:

Abell, J. and Myers, G. (2008) 'Analysing research interviews.' In: R. Wodak and M. Krzyzanowski (eds) *Qualitative Discourse Analysis in the Social Sciences*. Basingstoke: Palgrave.

[Online at: <http://www.psych.lancs.ac.uk/people/uploads/jackieabell20080530T104652.pdf>; accessed: 12.1.12]

Free software to support the analysis of interview transcripts is available such as Weft QDA, available from <http://www.pressure.to/qda>.

Analysing questionnaire data

The analysis of data from questionnaires can require a greater range of techniques, and may involve both quantitative and qualitative methods. Quantitative analysis techniques often involve statistical analysis, a fact that creates trepidation in the mind of many a would-be researcher.

While statistical tests are often used to establish the likelihood of relationships between variables, the tests generally presume certain conditions apply to the research study. For example, the most familiar tests such as chi-square test and the student t-test only apply to random sample data. The smaller the amount of data available, the less accurate statistical analysis becomes.

For the requirements of much small scale practitioner inquiry the use of simple descriptive statistics and relationships between paired data is sufficient for analytical purposes. For those less confident in using mathematical techniques, computer software is available, and many spreadsheet applications such as Microsoft Excel include data analysis tools.

When distributing self-response questionnaires it is extremely unlikely to get a 100% return rate. Within the analysis stage it is then important to identify the rate of non-return, since it is widely acknowledged that the views of non-respondents are often different to those of respondents. This means that a note of caution is required when drawing conclusions from incomplete data sets, particularly where a random sampling strategy is assumed.

Where qualitative data is generated by a questionnaire, the approach to analysis is akin to that for structured and unstructured interviews, depending on the style of question used. Responses to open questions are usually reduced to key statements that can be categorised into themes across all questionnaires received in order to identify similar areas of response.

A quasi-statistical approach can be used by coding word answers numerically. Here the analysis applied must take account of the nature of the relationship between the coded data. So that for instance, responses to the question 'Are you male or female?', the responses 'male' may be coded as 1 and 'female' coded as 2. These numbers are therefore totally arbitrary and cannot be subjected to any statistical analysis other than to find the frequency with which either occurs.

For a discussion of applying quantitative analysis approaches to qualitative data see:

Abeyasekera, S. (undated) 'Quantitative analysis approaches to qualitative data: why, when and how'. Reading: University of Reading. [Online at: http://www.reading.ac.uk/ssc/n/resources/Docs/Quantitative_analysis_approaches_to_qualitative_data.pdf; accessed: 12.1.12]

Analysing observation data

Informal observations tend to be associated with qualitative methods of data collection and analysis. The data is often in the form of notes that are then analysed using the techniques for unstructured interview analysis previously discussed. Whether or not the researcher is a participant in the study is an important consideration within the final analysis.

As a participant the researcher will by nature be analysing the event as they participate, if largely subconsciously. This will then impact upon their own behaviour, and if a series of events are observed there may be some shaping of events based on previous observation experiences. This potential change impact needs to be acknowledged within the analysis and conclusions drawn.

Analysing documentary data

The types of documents that may be utilised within research studies range from purely statistical (quantitative) data to anecdotal accounts. The literature review process described elsewhere in this module is a form of documentary analysis, where the documents are likely to include both qualitative and quantitative data.

Critical interpretation of documents will involve an understanding of the documents authorship and purpose. What is written in many documents is already influenced by the author's viewpoint. Analysing what may have influenced this is part of the process of documentary analysis, so that any data can be interpreted within its relevance to the context of your own study.

For qualitative documents, the analysis procedures progress along the lines already discussed for interview transcripts.

Quantitative data needs careful handling, depending on how it is presented within the document. Where raw statistical data is available you will be able to analyse its significance to a far greater extent than when the data is only presented in summary form.

For example, a document containing exam results may contain lists of marks obtained by each pupil in each exam. This raw data could be used alongside other document sources to analyse the data by gender, class group or similarly by other criteria. If the document gave only the marks awarded for each exam, further analysis is more restricted.

As with all secondary data, the trustworthiness of the document source needs to be determined, and any question marks about reliability need to be allowed for within the analysis and interpretation process.