

Analysing qualitative data collected using digital methods

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Preparing for data analysis

Keeping a research diary of the analytic process is recommended as qualitative analysis is an iterative process, involving going back over data many times as analytic ideas are developed and patterns are detected. Capturing these is an important part of the analysis. If time and costs allow, this is an area where computer assisted qualitative data analysis software (CAQDAS) may be useful. For example, NVivo allows the researcher to create and save analytic memos as part of the database, making these (as well as the data) fully searchable. They are also useful for the more prosaic aspects of analysis such as creating themes in the database to match those developed by the researcher to which data extracts can be coded. The ability to search for key words or phrases throughout the dataset is also useful. However, we appreciate that for most Masters research students the time involved in becoming familiar with new software and the cost investment are real barriers and the use of CAQDAS is not in any way essential.

Different forms of data analysis

Here we briefly outline some of the more common methods of analysis that are potentially suitable for using with qualitative Internet data. Selecting an appropriate form of analysis for a research project requires considering not only that the method is commensurate with the philosophical assumptions of the research paradigm but that the analytic method is compatible with the data types and can address the research question(s).

Content analysis has been predominantly used as a method of analysis that turns qualitative data into a format that can produce quantitative data in support of hypothesis testing or information gathering. An example of this is the quantitative content analysis of the Facebook profiles of non-profit organizations by Waters and colleagues (Waters et al., 2009). However, the focus on counting means a loss in the richness that is typical in most qualitative data. A qualitative version of content analysis has been developed which allows researchers to investigate a topic or phenomenon 'through a detailed examination and systematic interpretation' of material 'to discover patterns and themes' (Sundstrom and Levenshus, 2017: 22). These authors used qualitative content analysis to develop and employ analytic codes to their data in a way that went beyond counting and categories and enabled a deeper understanding of online communication (Sundstrom and Levenshus, 2017).

Thematic analysis is a widely used analytic technique in business and management research. It entails a systematic approach to qualitative data that involves organizing usually textual data into themes. Themes, or patterns of cultural meaning, are generally a mix of top-down, that is, pre-defined from the academic theory or empirical work and bottom-up, that is, the result of the researcher's interpretation of the data. The data is coded and classified by reference to these themes. One of the most commonly used forms is template analysis which is a generic style of thematic analysis and involves the researcher producing 'a list of codes (a template) representing themes identified in their textual data' (King, 1998: 118). The great virtue of thematic analysis is its adaptability to many different types of data, including Internet data, and the fact that it can be used with many different methodological approaches and underlying research philosophy (King and Brooks, 2017). Further information about template analysis is available in King & Brooks' (2017) book on that subject.

Given that web data is likely to include images, the researcher should also consider visual analysis. We use the term visual analysis to cover a range of different ways in which web images can be analysed. As we found when we analysed stock photos of men and women of

different ages in relation to work (Pritchard and Whiting, 2015), we had to craft an analytic lens that combined a number of existing methods of visual analysis, two of which were Davison's (2010: 165) rhetoric framework which particularly emphasizes attention to 'visual portraiture codes' and Rose's (2012) areas of investigation of the image: technological, compositional and social modalities. Pritchard (2020) has further developed a framework for Combined Visual Analysis (CVA), bringing together compositional, reflexive and semiotic analysis. Other options for visual analysis include a visual semiotics approach (Kassinis and Panayiotou, 2018) and visual content analysis (Kerkhoven et al., 2016). Methods traditionally used for textual analysis, like discourse analysis (see below), have also been adapted for visual data, as in the case of YouTube videos (Kelly et al., 2012).

Discourse analysis is one of a number of analytic methods that focus on talk and text. Others include rhetoric analysis, stories and narrative analysis. Such methods have developed following the linguistic turn in business and management studies in which language is seen as both constructed and constructive. Whilst there are many different overlapping types of discourse analysis, they share a 'common attention to the significance and structuring effects of language' (Burman and Parker, 1993: 4). The practicalities of these different forms of discourse analysis often vary according to individual researcher practice (Jørgensen and Phillips, 2002) but they generally share certain underlying principles such as a foundation in social constructionism and apply 'insights from Foucault and/or Fairclough' (Hardy and Grant, 2012: 558). A starting point in many forms of discourse analysis is to conduct a broad, thematic analysis of the data as the first stage in the development of more specific discursive elements.

A good illustration of this is set out in Figure 1 of [Glozer et al \(2019\)](#) which represents the data structure and an example of the first stage of discourse analysis. These authors describe how the first stage in their analysis involved close examination of the specific content of their Facebook data in order to identify 'first order concepts through open coding', in other words, a broad, thematic analysis. This resulted in fifteen descriptive concepts (examples give in the first column in Figure 1 of their paper). From these the

researchers distilled seven second order themes (those in the second column) and from that, they identified three discursive processes of legitimation (third column). This is an over-simplification of the steps involved but a clear and useful description is offered in the published paper by these authors (Glozer et al., 2019).

Table 6.1 in chapter 6 of our book (Whiting & Pritchard, 2021) provides examples of using various methods of data analysis with qualitative Internet data. However, it is possible that no single method will fit sufficiently well with your evidence and you will need to combine methods, look for others or develop your own. We have noted the emergence of new approaches to analysis, no doubt in response to the challenges of analysing new forms of data such as social media (e.g. Twitter) and multi-modal genres (e.g. websites). First, researchers are combining different methods of analysis to address their datasets (Kassinis and Panayiotou, 2017; Young and Foot, 2005). Second, they are developing (potentially) new methods of analysis, for example, drawing on 'social semiotics and multi-modal discourse analysis' to develop website analysis (Swan, 2017). Third, existing methods of analysis more traditionally associated with quantitative data are being developed to use with qualitative data, for example, content analysis (Sundstrom and Levenshus, 2017). In some cases, researchers have included details of their analytic steps to show what a blended or new analytic method entails when working with qualitative Internet data. An example of this is [Swan \(2017\)](#) which sets out the four stages in her analysis of a website. It is worth noting that this paper also included consideration of how the author drew on established analytic methods and integrated them to move towards a hybrid media analysis suitable for her website study. The development of a new hybrid method of analysis is research at an advanced level but by the inclusion of this level of detail, the publication ensures that this is available for other researchers to use in analysing their own data.

Presenting qualitative Internet data

Writing up the findings of qualitative analysis is always challenging as the researcher needs to find a balance between interpretation and example. Analysis is carried out of all the data but only a selection of extracts can be included in the presentation of the findings. In our

experience of supervising and assessing masters research dissertations, a common weakness in the Findings section is an over-reliance on data quotes which are then under-analysed. In other words, the researcher has left the data extracts to speak for themselves, which they cannot do. This is neither good data analysis nor does it make for good presentation of findings. All quotes should be accompanied by analysis that unpacks what is going on in the extract and links this to the wider point being made in the findings. One way to include more data is the use of tables where further data extracts can be presented in support of the analysis but without the individual quotes being analysed in depth in the text. An example of this is in Figure 1 below which is taken from our paper on reconstructing retirement that analysed online media coverage of an insurance report (Whiting and Pritchard, 2020). This extract presents illustrative data from below the line reader comments to online media articles.

Figure 1: Presenting illustrative Internet data in tables taken from Whiting & Pritchard (2020: 8)

Reader comments (from U.K. online news)

Some of us older people enjoy our jobs and don't want to retire—and are fit enough to continue working without feeling “weary,” thank you very much.

As a 61 year old male who has been looking for and applying for jobs for the last 12 months after redundancy I fail to see what jobs pensioners are going to do . . . pensions . . . must be protected at all costs.

So, people who have paid into their pensions through their working lives are being robbed of the retirement they paid for.

Older people have the life experience to help and guide society and the new found fitness of the general aging population should not be wasted, lying around watching the T.V. or going for gentle walks.

At the end of the day it will cost more in sick pay and replacement staff than it would have cost to pension people at 60 or 65 years of age. Not everyone can work until they drop in order to save the Government money. . . . Do you want a train driver or pilot aged 70? I will choose to work after retirement age because I enjoy what I do, relish the social interaction it brings and wish to keep my mind and body as active as possible. That is my choice, however, and I have the freedom to make it. I am aware of many contemporaries whose only wish was to reach retirement age and spend the rest of their time on more leisurely pursuits.

Most of the people who are in their 60s at my workplace are almost constantly going from one doctor's appointment to another with their various old age type ailments.

As we saw in the example in Figure 1 above, data extracts can also be presented as part of explaining the data analysis, but again they need to be explained in relation to the various steps in the analytic method.

On the other hand, it is very effective to include data extracts as they can be powerful ways to bring the analysis to life and engage the interest of the reader. Primarily data quotes should be used to elaborate or illustrate a point in the analysis or as part of the development of a line of argument. Care needs to be taken to make it clear to the reader

the status of the extract: for example, is it illustrative of a particular finding or representative of a wider subset of the data?

With Internet data the researcher may have a mix of textual and visual data. How these different forms of data are presented in the findings will largely depend on how the data forms relate to the research question(s). If different questions are addressed by different forms of data, then the findings are likely to present text and visual data separately. The issue of reproducing visual data from the Internet is a particularly challenging one where the researcher must bear in mind copyright of visual images. This is more significant in the context of academic publishing where journals monitor compliance with copyright laws. A few workarounds are possible. One is to provide hyperlinks to the original Internet location where the visual image can be found. Another is to buy the rights to reproduce the images as we did in our paper examining stock photos (Pritchard and Whiting, 2015). Alternatively, the researcher can use 'thumbnails' of images where only a small portion of the original image is reproduced (Pritchard, 2020).

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