

Content analysis references

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Content analysis steps in general

1. Determine the unit of analysis;
2. Develop a procedure to determine the appropriate unit of analysis (only if necessary);
3. Determine the reliability of unitisation (only in case of quantitative content analysis);
4. Re-use, adapt or develop a coding scheme;
5. Assess the validity of the coding scheme and establish coding rules;
6. Determine the reliability of coding (only in case of quantitative content analysis).

Things to think about when designing a coding scheme

- The applicability of a unit is affected by a) unit boundary overlap, b) research goal, c) nature of communication, d) collaborative setting, and e) the technological tool (chat is different from e-mail; see Strijbos et al., 2006 for more detail);
- Determine whether – and why – a single construct coding scheme (all units can only be coded as either A, B, C or D) or a dimensional coding scheme (the number of units that are coded in a given dimension varies) is appropriate for your research question;
- Decide whether you will work theory-driven (codes are derived or designed based on theories about the behaviour of interest) or data-driven (codes are extracted from the data and determined prior to analysis);
- There is no set rule for the number of codes. This depends on the level of detail in the analysis that you would like to conduct and the behaviour of interest. You should also bear in mind that a larger number of codes also makes the task of coding cognitively more demanding (and hence more susceptible for coding errors due to fatigue). In my research I have used up to 18 codes in a single construct scheme and up to 15 codes in one dimension of a dimensional scheme. Again, there are no strict rules but the codes should still be representative for the behaviour of interest (validity). You decide, but decide wisely!;
- When designing a coding scheme you will always need several iterations (also called the calibration phase). Use about 10% of the data in each iteration to ensure that behaviour of your interest occurs and that this can be coded. When you have several research conditions, make sure that all the conditions are represented during each trial so that your scheme is tuned specifically to one of your research conditions;
- The size of the sample on which you will do a reliability trial is also related to the number of codes. The 10% rule is used to a) have a decent sample that is representative and b) ensures that all codes in your coding scheme will be used (have a frequency of observations). If your sample is too small and not every code is used, than what does your reliability statistic say about your coding scheme?
- When designing a coding scheme you will always run into utterances that a) do not fit any code or b) are ambiguous and could fit to more than one category. Usually a) can be solved by including a 'non codable' category, but make sure that no more than 20% is put into this category (if 50% ends up here you should ask yourself the question what you are actually measuring), and b) can be solved by including rules to handle ambiguous utterances. Again, the number of rules should be limited (if you have hundreds of rules you should ask yourself what you are measuring). Both issues affect the overall validity;
- When you will not be coding all units – as the behaviour of interest does not occur in every unit – avoid reliability overestimation due to 'missing values' (Strijbos & Stahl, 2007 for an illustration of this issue);
- After the calibration phase (your scheme appears satisfactory) you should conduct at least two complete reliability trials for coding and segmentation, so you can show that the proportion, kappa or alpha is not due to one 'lucky shot'.

Things to think about when reporting content analysis

- Cohen's kappa or Krippendorffs alpha are preferred measures for reliability because they correct for agreement by chance. Proportion agreement is not preferred, but this can sometimes not be avoided – specifically with respect to unitisation (for example, computing kappa for only two categories leads to very low values because the kappa correction for chance is stronger with fewer categories, Weinberger & Fischer, 2006);
- When re-using or adapting a scheme: always report the kappa or alpha as reported in the original study (this is already accepted practice for Likert scales). When adapting, indicate the changes that have been made and provide arguments for those changes;
- Be as specific about the development of your coding scheme as the journal space allows!