

Topics and Exercises for Research Methods: Data Analysis sessions

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Depending upon the timetable and allocated sessions, I will conduct seminar style workshops, using individual and group exercises, which illustrate and explain the following methods and techniques of both quantitative and qualitative data analysis.

1. Basics of data analysis - types of data; the framing exercise: determining 'ontology' (data types, data sources, factor analysis of variables) and 'epistemology' (methods and techniques of data gathering / analysis and presentation).

[Exercise is to decide within groups, based on pre-defined questions, the most suitable 'ontology' and 'epistemology' for a research proposal]

Relating research questions to types of primary data: qualitative / quantitative; sampling frames and sampling methods.

2. Basic principles of quantitative data analysis: descriptive versus inferential statistics. Mean, Median, Mode and Standard Deviation - and when to use them. Properties of distributions -- "normal" distributions, kurtosis and skew.

[Exercise: Averages, Frequency analysis Box plots; variance, Variance and Co-variance. (Initial example of calculating distributions and variance)].

3. Analysis of qualitative data - deductive (top-down) versus inductive (bottom-up) approaches: categorising and unitising qualitative data; pattern-matching and explanation-building; content analysis versus thematic analysis versus grounded theory (coding qualitative data).

Demonstration of use of CAQDAS (NVIVO, Atlas) for qualitative analysis; Exercise in categorisation of interview-based data.

4. Analysis of variance: ANOVA -- confidence levels and regression analysis. [Exercise: linear regressions and multi-variate analysis]

5. Sampling: sampling frames and sampling methods (probabilistic and non-probabilistic).

[Exercise: selecting the appropriate size and profile of samples using the sample mean.]

There may not be time to complete all exercises during group sessions in class. You are strongly advised, however, to download copies of the exercise sheets provided here to complete the exercises at home, individually.

If you need help in completing an exercise at home (or away from class), please do not hesitate to contact me - using the Moodle discussion forum - and I will try to post a reply which all students of the workshops can see. [Other students are, of course, encouraged to post answers to the exercises to the Moodle forum, in order to share your insights into data analysis].

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