

## Factor Analysis

### MA Social Research module

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**Pre-requisite:** It is assumed that students undertaking this module will have undertaken SRM2 (or equivalent) and so will have used SPSS, and have some understanding of statistical inference, correlation, multiple regression and analysis of variance.

### Module Outline

It is often helpful to reduce a large number of variables down to a smaller number, such as reducing a series of attitude questions down to only a few underlying dimensions. The technique of factor analysis provides the tools for such a task. These are often used to help summarise and understand the structure of data and are a popular way to generate scales for further analysis. The theoretical and practical differences between exploratory and confirmatory factor analysis will be discussed.

Compared with other statistical techniques, there is a greater role for decisions made by the investigator, and so the importance of transparency will be emphasised.

This course aims to demonstrate factor analysis in action and enable students to conduct their own analyses of this kind. Example dataset will be analysed in SPSS, and we may also use AMOS to demonstrate confirmatory factor analysis. We will also critique published research in this area.

### Learning outcomes

**By the end of the module, students will be able to:**

- Critique published research that uses factor analysis;
- Conduct their own factor analysis in SPSS (and possibly in AMOS);
- Be aware of key issues including factor rotation and the number of factors;
- Understand the limitations of this approach and the use of a variety of diagnostic tools;
- Be aware of how to communicate the results of such models to social sciences audiences.

### Course Assessment

A 2000 word report using a dataset provided by this course or the student, which addresses the QAA criteria and all 5 learning objectives.