

MSc in Applied Social Research

Quantitative Data Analysis Assignment 2

Introduction to SPSS assignment 2

The focus of the second SPSS assignment is on creating new variables through data reduction and on modelling outcomes. This kind of analysis is routinely conducted for dissertations and academic papers, but you would rarely see it in the public domain.

Let's presume you are writing the analysis for an academic journal. There are examples of quantitative journal articles on Blackboard in the Survey Design folder but you can use any examples from a research area which interests you. The guidelines for the assignment are:

- There is a convention that the findings of any analysis you present in the results section of a report should be stated in plain prose in the discussion section. For this assignment present the analysis in standard format as you have learnt in SPSS workshops (refer to Tabachnick and Fidell 'Using Multivariate Statistics' for further clarification on specific points of presenting results) and at the end have a short 'Comment' which spells out in plain English and without the use of statistics what the findings have told us. There is no need to relate the findings to the research literature.
- When using Principal Components Analysis bear in mind that this technique not only creates new variables for future analysis but also tells us something about the variables we are measuring - take time to discuss the results and the naming of components.
- When using significance tests make sure you clarify the direction and meaning of a result - avoid saying 'There were significant differences between men and women in political trust' – do say 'Women reported significantly higher levels of political trust than men'.
- Do not report more analysis than has been requested.

- Methodological details such as computing and recoding in SPSS / assumption testing for regression should be documented but as they have no direct bearing on the main research questions they should be provided in an appendix.
- Try to avoid using SPSS outputs in the main text of a report (OK in an appendix if you want but not required). Select the parts of your output most relevant to your needs and incorporate them into your text.
- There is no need for fancy graphic design or unnecessary graphs to make the report look colourful (use necessary or useful graphs by all means).
- Discuss all findings fully. You can use graphs and tables to supplement the main text but they do not replace it.
- When using an independent t test or ANOVA you usually do not need to report the results of Levene's test in the text unless you are going to discuss difference / similarity of variance in the groups.
- Always report means and percentages to at least one decimal place – even when the first decimal place is zero – i.e. it is 78.0% rather than 78%.
- Present full sets of findings, do not 'select' a couple to discuss. The aim is to be as transparent as possible so the reader can make up their own mind.
- Report full results even if the relationship is not significant.
- If you include a graph or table make sure you refer to it in the text: 'As can be seen in Table 2...etc.'.
- Title all graphs ('Figure 1: Frequency of radio listenership' etc.).

Download the '**SPSS assignment 2 data**' from Blackboard.

Make sure you use the variables with the SPSS Names as listed below.

This assignment is due by **5pm on Friday April 14th 2023**. The completed assignment is to be submitted via Blackboard. There is no written submission.

Assignment 2

1. Conduct a principal components analysis of the nine political trust variables [a10_1, a10_2, a10_3, a10_4, a10_5, a10_6, a10_7, a10_8, a10_9]. Describe your results and explain the decisions you made. Save scores for the largest component (i.e. the one which explains the most variance in the original scores).

- Do men and women [f1] differ on their scores on the largest component?
- Is this component related to age [f3] or education [f2]?
- Construct a regression model of this component based on age [f3], gender [f1] and education [f2].
- Describe your results, the diagnostics you performed and any transformations or other alternations to the data that were made. Provide diagnostic plots in the appendix.

2. Conduct a principal components analysis of the ten attitude to the environment variables:

- People believe too often in the ability of science to solve environmental problems [e3_1].
- Modern science does more harm than good. [e3_2].
- In the long term modern science will solve our environmental problems. [e3_3].
- These days people worry too much about the environment. [e3_4].
- Everything we do in modern life harms the environment [e3_5].
- People worry too much about the way human progress harms the environment. [e3_6].
- Ireland needs to worry more about economic growth than about protecting the environment. [e3_7].
- It is right to use animals for medical testing. [e3_8].
- Economic growth always harms the environment. [e3_9].
- The Earth cannot support the current population growth rate. [e3_10].

Describe your results and explain the decisions you made.

Save scores for the largest component.

Construct an Analysis of Variance model predicting scores on this component on the basis of the variables gender [f1] and size of location [f44]. Describe and explain your results.