

CHAPTER 3: MULTIDIMENSIONAL SCALING

Data used in Chapter 3 are provided in ASCII (*.txt) and, where the raw data (rather than a similarity/dissimilarity matrix) are available, SPSS v.10 format (*.sav). The SPSS syntax for carrying out the analysis presented in the book is also given (*.sps) together with the output file (*.spo). SPSS output files (*.spo) can only be viewed in SPSS, but output files are also provided in pdf format.

Note that the first line of each syntax file will need to be edited to give the correct location of the data file.

country.txt

The data are from an experiment conducted in 1968 in which 18 students were asked to rate the similarity between each pair of 12 countries on a scale of 1 ("very different") to 9 ("very similar"). The mean similarity ratings, calculated across students, are given in Table 3.2. The file *country.txt* contains the lower triangle of the similarity matrix. Syntax for reading the similarity matrix into SPSS and carrying out 2-dimensional ordinal scaling is given in *country.sps*.

The countries are labelled as follows:

X1=Brazil
X2=Congo
X3=Cuba
X4=Egypt
X5=France
X6=India
X7=Israel
X8=Japan
X9=China
X10=Russia
X11=USA
X12=Yugoslavia

colour.txt

The data are from an experiment in which subjects were asked to look at a screen which had two circular opaque glass windows. These windows were lit from two projectors behind the screen. Different colour filters could be inserted in the projectors. Fourteen colour filters were used. Each stimulus was combined with each other stimulus in a random order. The subjects were then asked to rate the degree of 'qualitative similarity' between each pair of colour filters on a 5-point scale. The similarity matrix is given in Table 3.4. The file *colour.txt* contains the full similarity matrix.

Syntax for reading the similarity matrix into SPSS and carrying out 1- and 2-dimensional ordinal scaling is given in file *colour.sps*.

econ.txt /econ.sav

The data are the values for five economic and demographic indicators for a sample of 25 countries (Table 3.5). The data refer to 1990 and come from the United Nations Statistical Yearbook of 1997. The file contains 6 variables.

COUNTRY	Country
INCREASE	Annual percentage population growth rate
LIFE	Life expectancy in years
IMR	Infant mortality rate per 1000
TFR	Total fertility rate
GDP	Gross Domestic Product per capita in US dollars

Syntax for carrying out 2-dimensional ratio scaling is given in file *econ.sps*.

archer.txt

The data are similarities between 24 carvings of Persian archers. The similarity matrix is given in Table 2.13. The file *archer.txt* contains the lower triangle of the similarity matrix. Syntax for reading the similarity matrix into SPSS and carrying out 2-dimensional ordinal scaling is given in file *archer.sps*.

dialect.txt

The data are from a study by the University of Leeds on English dialects. The similarities in dialects between pairs of 25 villages (labelled X1-X25) are given in Table 2.9. The file *dialect.txt* contains the lower triangle of the similarity matrix. Syntax for reading the similarity matrix into SPSS and carrying out 2-dimensional ordinal scaling is given in file *dialect.sps*.

acoustic.txt

The data are from an experiment in which 300 postal workers were asked to write down the letters they thought they heard when letters were spoken against a background noise at a rate of one letter every five seconds. Similarities were calculated as the average number of times that each letter was confused with another. The similarity matrix is given in Table 3.7. The file *acoustic.txt* contains the lower triangle of the similarity matrix. Syntax for reading the similarity matrix into SPSS and carrying out a 2-dimensional ordinal scaling is given in file *acoustic.sps*.