

## CHAPTER 10: LATENT CLASS ANALYSIS FOR BINARY DATA

Data used in this chapter are provided in ASCII (\*.dat) format. The data files (input files) are ready for carrying out the analysis with the LATCLASS program to be found in the LAMI interface.

We also give the output files in ASCII (\*.out) of the analysis performed with the LATCLASS program.

Note that if you want to perform a different type of analysis, for example increasing the number of classes, you need to edit the data file according to the instructions given in the LatClassReadMe file.

### **ABORTION.DAT: Attitude towards to abortion**

The data set is extracted from the 1986 British Social Attitudes Survey. The data are the responses given by 410 individuals to four out of seven items concerning attitude to abortion. After eliminating the missing values, we are left with 379 respondents. For each item, respondents were asked if the law should allow abortion under the circumstances presented under each item. A 'yes' response is coded as 1 and a 'no' response' as 0.

1. The woman decides on her own that she does not. [WomanDecide]
2. The couple agree that they do not wish to have the child. [CoupleDecide]
3. The woman is not married and does not wish to marry the man. [NotMarried]
4. The couple cannot afford any more children. [CannotAfford]

The output of the two-class analysis can be found in the file ABORTION.OUT.

### **SCIENCE.DAT: Attitude to science and technology**

The data used in this example come from the Consumer Protection and Perceptions of Science and Technology section of the 1992 Eurobarometer Survey based on a sample of 392 respondents from Great Britain. The questions chosen are given below.

1. Science and technology are making our lives healthier, easier and more comfortable. [Comfort]
2. Scientific and technological research cannot play an important role in protecting the environment and repairing it. [Environment]
3. The application of science and new technology will make work more interesting. [Work]
4. Thanks to science and technology, there will be more opportunities for the future generations. [Future]
5. New technology does not depend on basic scientific research. [Technology]
6. Scientific and technological research do not play an important role in industrial development. [Industry]
7. The benefits of science are greater than any harmful effects it may have. [Benefit]

Response alternatives:

0= strongly disagree and disagree to some extent

1= agree to some extent and strongly agree

The output of the 2-class and 3-class analysis can be found in SCIENC2C.OUT and SCIENC3C.OUT respectively.

### **SEXUALAT.DAT: Sexual attitudes data**

The data set is extracted from the 1990 British Social Attitudes Survey. It concerns contemporary sexual attitudes. The questions addressed to 1077 individuals were as follows.

1. Should divorce be easier?
2. Do you support the law against sexual discrimination?
3. View on pre-marital sex: not at all wrong...always wrong.
4. View on extra-marital sex: not at all wrong...always wrong.
5. View on sexual relationship between individuals of the same sex: not at all wrong...always wrong.
6. Should gays teach in school?
7. Should gays teach in higher education?
8. Should gays hold public positions?
9. Should a female homosexual couple be allowed to adopt children?
10. Should a male homosexual couple be allowed to adopt children?

For those items yielding a binary response (1,2,6,7,8,9,10), a positive response was coded as 1 and a negative response as 0. For items 3, 4, and 5 there were five categories: 'always wrong', 'mostly wrong', 'sometimes wrong', 'rarely wrong' and 'not at all wrong'. Responses 'sometimes wrong', 'rarely wrong', and 'not at all wrong' were coded as 1 and responses 'always wrong' and 'mostly wrong' as 0.

The output of the two- three- and four-class analysis can be found in the files SEXUAL2C.OUT, SEXUAL3C.OUT and SEXUAL4C.OUT respectively.

### **MACREADY.DAT: Macready and Dayton data**

This data set arises from educational testing where one wishes to study the learning process in children. The data set consists of answers from 1000 individuals to four tests. A correct response is coded as 1 and a wrong response as 0.

The output of the two-class analysis is given in MACREADY.OUT.

### **MOBILITY.DAT: Women's mobility data**

These data are from the Bangladesh Fertility Survey of 1989. The rural subsample of 8445 women is analyzed here. Women were asked whether they could engage in the following activities alone. A 'yes' response is coded as 1 and a 'no' response as 0.

1. Go to any part of the village/town/city.
2. Go outside the village/town/city.
3. Talk to a man you do not know.
4. Go to a cinema/cultural show.
5. Go shopping.
6. Go to a cooperative/mothers' club/other club.
7. Attend a political meeting.
8. Go to a health centre/hospital.

The output for the four-class analysis is given in file MOBILITY.OUT.

## **WIRS.DAT: WIRS data, Workplace Industrial Relations Survey**

This example is taken from a section of the 1990 Workplace Industrial Relations Survey dealing with management/worker consultation in firms. A subset of the data is used here that consists of 1005 firms and concerns non-manual workers. The questions asked are given below:

Please consider the most recent change involving the introduction of new plant, machinery and equipment. Were discussions or consultations of any of the type on this card held either about the introduction of the change or about the way it was to be implemented? A 'yes' response is coded as 1 and a 'no' response as 0.

1. Informal discussion with individual workers
2. Meetings with groups of workers
3. Discussions in established joint consultative committee
4. Discussions in specially constituted committee to consider the change
5. Discussions with union representatives at the establishment
6. Discussions with paid union officials from outside

The output of the three-class analysis is given in WIRS.OUT.