

CHAPTER 8: FACTOR 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 GENLAT program to be found in the LAMI interface.

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

Note that if you want to perform a different type of analysis, for example increasing the number of factors, request factor scores etc. you need to edit the data file according to the instructions given in the GenlatReadMe 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 one-factor analysis can be found in the file ABORTION.OUT.

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 one-factor and two-factor analysis can be found in the files SEXUAL1F.OUT and SEXUAL2F.OUT respectively.

LSAT.DAT: The Law School Admission Test

The LSAT is a classical example in educational testing for measuring ability traits. The test as given consists of five items taken by 1000 individuals.

The output for the one-factor analysis is given in LSAT.OUT.

WIRS.DAT: WIRS data, Workplace industrial relations data.

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 one-factor analysis is given in WIRS1F.OUT.

WIRS5IT.DAT: This is the same data set given in WIRS.DAT but item 1 (informal discussion with individual workers) is omitted.

The output of the one-factor and two-factor analysis is given in files WIRS5IT1F.OUT and WIRS5IT2F.OUT respectively.

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 (1=yes, 0=no).

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 of the one-factor and two-factor analysis is given in files MOBILI1F.OUT and MOBILI2F.OUT respectively.