Multilevel Modelling in Social Science SSPS10024

Practical Project: Due on 22nd April 2024.

This note describes the assignment and one of the data sets that you can choose to use for the end-of-course practical project, worth 75% of the total marks for the course.

Using data from the Scottish School Leavers Survey (see further details below), write a report of up to 3000 words on factors which are associated with people's highest educational qualification by the time they left secondary school (using a version of the variable HQUAL that is recoded to a binary variable). You should perform analysis using Noteable (or R if you prefer), but you should extract appropriately formatted results and present these in Word submitting your final report in either Word or as a PDF. You should use relevant literature to inform your model and interpretation of results.

You should draw upon appropriate techniques that you have used in the course. You may do this in any way that you choose, but, before doing the main part of your analysis, you might want to consider the following points:

1. Does HQUAL vary among schools?
2. You should recode HIQUAL to a **binary variable** and model accordingly.
3. You should consider how HQUAL varies according to respondent's sex, age at which parents left full time education and parental social class.
4. Do the relationships between HQUAL and the respondent's sex or age at which parents left full time education or parental social class vary among schools?
5. Investigate how the replies to the suites of questions Q1 and Q2, relate to HQUAL controlling for an individual's sex and paternal social class. You can handle Q1 and Q2 however you wish, for instance creating indexes or selecting indicative questions. Remember to justify your decisions.

Structure

You are free to decide on the structure of your report, but one structure which you could use is:

Introduction

*   What the project sets out to do with reference to appropriate literature.

Sources of data

*   Briefly describe the data, drawing upon your own descriptive analysis as well as on appropriate aspects of the information about the survey found in the report on it which is on Learn.

Data analysis

*   Preliminary data analysis: this would be mainly descriptive statistics about HQUAL, and analysis of how it varies between Schools.
*   Main analysis: Building upon the preliminary analysis, this section would provide your main analysis of the factors which are associated with people's highest educational qualification by the time they left school (see points 2-4 above).

Conclusion

*   This section would summarise the results in non-technical language.

Remember presentation is important. You should extract the key model results and present these succinctly. All figures/tables should have titles and be well labelled.

Scottish School Leavers Survey, 1999 (extract) Variables in the extract:

PUPILID: index of pupils

SCHOOLID: index of secondary school attended

HQUAL: scale of highest educational attainment by the time the respondent left secondary school. Note that this is expressed in terms of the main Scottish school exams: 'standard grades' are the main exams taken at around age 15-16, and 'highers' are the main exams taken at around ages 17-18. The variable is ordered, so that higher values in it correspond to higher attainment.

SEXMF: sex of pupil

PARSC: parental social class

PARLEFT: ages at which parents left full-time education.

Q1A to Q1L: answers to the 12 parts of Q1 of questionnaire (see page 3 below)

Q2A to Q2I: answers to the 9 parts of Q2 of questionnaire (see page 3 below).

For the data set in Learn, missing values have been excluded, and the names of the schools have been removed. There are 3,689 pupils in the data set, in 407 secondary schools.

Further summary information about the survey can be found in the report of it which has been placed in Learn.

YOUR TIME AT SCHOOL

1. **Think back to your 4th year at school (S4). For each of these statements, please tick a box to say whether you agree or disagree.**

	Agree	Disagree
School has helped to give me confidence to make decisions	☐₁	☐₂
School has done very little to prepare me for life when I leave school	☐₁	☐₂
School has taught me things which would be useful in a job	☐₁	☐₂
My school had a wide choice of after-school activities	☐₁	☐₂
My school dealt well with any bullying that went on	☐₁	☐₂
There was vandalism at my school during the school day	☐₁	☐₂
If I had a problem there was always a teacher I could talk to	☐₁	☐₂
Theft among pupils was common at my school	☐₁	☐₂
My school dealt well with any harassment that went on	☐₁	☐₂
Pupils respected the teachers	☐₁	☐₂
Pupils sometimes got bullied	☐₁	☐₂
Pupils sometimes got harassed	☐₁	☐₂

2. **Still thinking about your 4th year at school, please tick one box for each of these statements to say whether you agree or disagree.**

	Agree	Disagree
School work was generally worth doing	☐₁	☐₂
There were too many troublemakers in my S4 classes	☐₁	☐₂
My teachers helped me to do my best	☐₁	☐₂
Many teachers could not keep order in class	☐₁	☐₂
My friends took school seriously in S4	☐₁	☐₂
Pupils who were punished usually deserved it	☐₁	☐₂
Teachers listened to my ideas and views	☐₁	☐₂
Teachers often gave me homework in S4	☐₁	☐₂
Teachers made sure I did homework they set	☐₁	☐₂