Contents

COURSE WORK BRIEF

Report on Guided Learning Hours in Further Education and Sixth Form Colleges

Source data

The source data files for this project are listed above. The files from which you can import the data are:

- **IMAT5168-6FORM.csv**
  containing data about guided learning hours for UK 6th form colleges
- **IMAT5168-FE.csv**
  containing data about guided learning hours for UK further education colleges.

Alternatively, you may wish to use the Microsoft Excel spreadsheet versions. In either case, you should examine the spreadsheets carefully so as better to understand the structure of the data.

Problem outline

The source data files: IMAT5168-6FORM.csv and IMAT5168-FE.csv contain data about guided learning hours (GLH) and the number of learners - for two different types of UK educational institutions: 6th form colleges and further education colleges, for each of three years.
In both files, the column heading "Total GLH Year X" refers to the GLH for the institution during year X (where X is 1, 2 or 3 and may not be assumed to be successive years), while "Learners" refers to the total number of students. When the first column of a record is the name of an English Region (such as East Midlands, Greater London or South East) that row refers to GLH for an entire region, not a college.

Suggested categories for the size of an institution are defined in terms of GLH as follows:

Total GLH	Size
greater than 3,000,000	Large
between 2,000,000 and 3,000,000	Large-medium
between 1,000,000 and 2,000,000	Medium
between 500,000 and 1,000,000	Small-medium
less than 500,000	Small

NOTE: The ranges should not include the upper limit. If a range is specified as between values for the minimum and the maximum, the range is defined as: minimum <= Total GLH < maximum.

Task

Your task is to use SAS to examine the effect of region, institution type, institution size and year on GLH per learner. You should then conduct a suitable analysis to determine by institution type and size the effect of region and year on GLH per learner.

During your analysis, you should address:

1. importing the data as well as identifying any anomalies and whether to include them in the analysis
2. exploratory data analysis
3. appropriate methods for summarizing the data
4. implementing and validating appropriate statistical model(s)

Outputs

You should submit:

1. ***the SAS code*** to read and analyse the data.
2. ***a report*** about the analysis carried out, a structure for which is suggested in the next item.

Guidelines for the structure of the report

The body of the report should be written on no more than 4 sides of the paper, using at smallest a 10 point font, with 6 points (0.5 line) paragraph spacing. It should consist of the following components:

1) Summary

This should provide a brief summary (in a few sentences) of the major conclusions you have drawn.

2) Methods

Describe and justify the choice of SAS code to address:

- importing the data as well as identifying any anomalies and whether to include them in the analysis
- The exploratory data analysis
- The choice of statistical model(s) and relevant validation

3) Results

Present the results of your analysis with relevant graphs and/or tables and report whether the assumptions of your chosen statistical model(s) have been met.

4) Conclusions

Present the conclusions you have drawn from your analysis.

5) References

You should list any relevant scholarly articles or other material you have used to compile the report.

Marking Grid

Element	0-44% Fail	45-49% Marginal Fail	50-59% Pass	60-69% Merit	70-79% Distinction	80%+ Distinction

Updated! **REPORT summary, results and conclusions.** ***Weighting: 30%***	Poor layout Did not use the suggested structure Does not relate to SAS code submitted	Readable layout Followed the structure imperfectly Some content justified by the SAS analysis conducted	Good presentation Followed the structure well Most content supported by the SAS analysis conducted Some inclusion of relevant tables and graphs	As pass All content justified by the SAS analysis conducted Inclusion of tables and graphs Report of statistical model	As merit Excellent presentation of all relevant material	A distinction Report was written to a professional standard
REPORT methods: data import, exploratory analysis and statistical model ***Weighting: 10%***	No mention of choice of statistical method in the report	Inappropriate handling of raw data Poor choice of exploratory data analysis	Raw data handled correctly Appropriate choice of exploratory analysis	As pass Appropriate choice of statistical model Appropriate assessment of assumptions	As merit Appropriate handling of model assumptions	A distinction Statistical analysis conducted to a professional standard
SAS PROGRAM **Code to analyse the data provided** ***Weighting: 60%***	Poor layout Non-functioning code No appropriate SAS data set created	Difficult to read Functioning code (no errors) Few explanatory comments SAS data set created	Some reader friendly layout Functioning code (no errors and only appropriate warnings) Some relevant explanatory comments SAS data set created with appropriate handling of anomalous data. Some appropriate reports created.	As pass Reader friendly layout Reader friendly explanatory comments All appropriate reports for exploratory data analysis created A statistical model reported	As merit Easily portable code Statistical model reported with assessment of assumptions	As distinction Appropriate use of macros Code written to a more professional standard than distinction