UNIVERSITY OF STRATHCLYDE
DEPARTMENT OF MATHEMATICS & STATISTICS

MM104: Statistics and Data Presentation Semester 2
MM107: Statistics and Data Presentation

PROJECT 1: VISUALISING CATEOGORICAL DATA

Overview

In this project you will

1. Be introduced to working with large data-sets.

2. Become familiar with categorical data.

3. Learn how to display categorical data in a meaningful way.

4. Use Minitab to create Tables and Graphs.

5. Use Word and PowerPoint for reports and presentations.

6. Develop your presentation skills

In your groups, you will work with a large data-set. Each group will focus on a sub-set of the data and create tables and charts to summarise results. You will then present your findings in the form of a PowerPoint Presentation and a Word Processed Report.

The Data Set

The data-set that we will use is a sub-set of the Scottish Social Survey which was carried out in 2019. Respondents answered questions concerning many aspects of every-day life. Our subset contains information on 9 variables. The variables are described in the following table (each is coded according to the responses).

ID	Participant Identification Number	
Sex	0	Male
	1	Female
Age (years)	0	16-34
	1	35-44
	2	45-54
	3	55-64
	4	65+

Question	Coded Response	Meaning
Trust_UK How much do you trust the UK government to work in Scotland's best long-term interest?	0 1 2 3 4	Just about always Most of the time Only some of the time Almost never Don't know
Trust_Scotland How much do you trust the Scottish government to work in Scotland's best long-term interest?	0 1 2 3 4	Just about always Most of the time Only some of the time Almost never Don't know
Influence_Scot Which of the following do you think has the most influence over the way Scotland is run?	0 1 2 3 8	The Scottish Government The UK Government at Westminster Local Councils in Scotland The European Union Don't know
Influence_Ought_Scot Which of the following do you think ought to have the most influence over the way Scotland is run?	0 1 2 3 8	The Scottish Government The UK Government at Westminster Local Councils in Scotland The European Union Don't know
NHS All in all, how satisfied or dissatisfied would you say you are with the way in which the National Health Service runs nowadays?	0 1 2 3 4 8	Very satisfied Quite satisfied Neither satisfied nor dissatisfied Quite dissatisfied Very dissatisfied Don't know
Standard_Of_Living What about the general standard of living in Scotland? Has it increased or fallen since (month of interview) previous year?	0 1 2 3 4 8	Increased a lot Increased a little Stayed the same Fallen a little Fallen a lot Don't know
Talking How much, if at all, do you talk with other people about government and politics?	0 1 2 3 4	Every day or nearly every day Less often but at least a few times a week Less often but at least a few times a month Less often but at least a few times a year Never or practically never

Each group will focus on 2 of the 7 variables on page 2, together with Age and/or Sex. Further details of the study can be found at `https://www.gov.scot/collections/scottish-social-attitudes-survey/`

Group Number	Topics
1	Trust_UK and Influence_Scot
2	Trust_UK and Trust_Scotland
3	NHS and Standard_of_Living
4	Influence_Scot and Talking
5	Trust_Scotland and Standard_of_Living

If you would rather choose your own two other variables then that is fine, but these two variable cannot be a pairing another group is doing.

Tasks

For each pair of variables you are expected to

- Conduct some background research about the survey itself and background research on the variables you have been assigned.

- Hypothesize if you think there will be a relationship between these variables - you will need to give appropriate reasoning. You will not yet have learned the statistical techniques to test this hypothesis.

- Obtain at least one contingency table, via Minitab, of the two variables.

- Obtain at least one bar chart, via Minitab, of the two variables.

- Compare the table of the two variables between sex and/or age using appropriate percentages and bar charts.

- Report your main conclusions from the variables you have observed.

Report and Presentation

Your Word report should be at least 3 to 4 pages, and at least 750 words (excluding title page and references). Your report should have sections which correspond to the sections in your PowerPoint presentation as well as a references section.

Remember: the first or second page should contain a declaration section. This should list the names of all group members and sentence outlining each person's contribution to the project. Each person should sign this sheet electronically.

Tips

- Remember the importance of a group strategy for the week and allocate tasks.

- Everyone in your group will have different strengths and weaknesses; think about these when allocating tasks within your group.

- Make sure the content of your presentation is correct and make sure that everyone in your group reviews the presentation and report to check for typos.

- Make sure you save regularly and upload it to Myplace before the deadline.

- Make sure you practise your presentation before recording it via Zoom.