

MA220 – Univariate Statistical Analysis

Assignment

Raw Data Analysis

INSTRUCTIONS:

- **Answer ALL questions** in a Word format file.
- **Clearly label both questions and their sub-questions; failure to do so will result in NO marks being awarded.**
- State your assumption(s) and ensure that all calculation questions **must clearly demonstrate appropriate working.**
- Save as this format “**Your name_Student number_assignment**”:
 - For example: my name is Peter Ho and my student number is 1234567.
 - I should save my working as “**Peter_1234567_assignment**”.
- Submit your Word file on via CANVAS no later than the due date.
- Suggestion: Save your work regularly (every 10 minutes perhaps).

Case Study (44 marks):

Sunflower College is a tertiary education provider in Western Australia, offering a variety of units for students to enroll in each semester. Accounting 100 is one of the favorite and core units for the Bachelor of Business course. Last year, 30 students were enrolled in this unit. Based on their scores, each student was assigned one of five grades.

The score and grading system are as follows:

0 - 49	Fail
50 - 60	Pass
61 - 70	Credit
71 - 80	Distinction
81 - 99	High distinction

The 30 students scores are as follow:

79, 63, 65, 51, 78, 27, 35, 61, 68, 98
 55, 97, 78, 57, 21, 67, 66, 68, 86, 88
 43, 45, 67, 76, 77, 54, 73, 62, 51, 67

Requirements:

1. Two variables are summarised in the case: student score and grade. Is the student score a numerical or categorical variable? Is the grade a numerical or categorical variable? Justify your answers. (4 marks)
2. Using the student score data to describe the centre of the score data. (14 marks)
3. a. What is the standard deviation? (4 marks)
 - b. Why does the standard deviation play an important role in discussing variability? (3 marks)
 - c. Explain how to use standard deviation in this case study. (4 marks)
4. Using all the provided data:
 - a. Calculate the frequency for each grade. (2 marks)
 - b. Calculate the frequency in percentage (%) for each grade. (2 marks)

c. Use Microsoft Excel to construct a bar chart showing the relationship between the frequency and the grades, with appropriate labelling.

Noted:

1. The x-axis of the bar chart must show the grade in this order from left to right: fail, pass, credit, distinction, and high distinction.

2. The y-axis of the bar chart must show the frequency (Note: Copy and paste your bar chart into the Word file) (4 marks)

d. Evaluate your results for the audience. (7 marks)

~ END OF ASSIGNMENT ~