# Unit 6

# Inferential statistics workshop

**For this workshop, you will need to work through the examples provided for you on both descriptive statistics and hypothesis testing. Please bring any questions you have about the analysis to this seminar. We will also discuss the interpretation of your results so please have your thoughts prepared.**

Worksheets 7.1B, 7.2B, and 7.3D were all relatively straightforward to complete. Worksheet 7.1B focused on comparing two diets, A and B, and revealed that Diet A resulted in greater average weight loss compared to Diet B, making it the more effective option. Additionally, the smaller standard deviation (SD) for Diet A indicated more consistent weight loss among participants, suggesting greater reliability in its outcomes.

Worksheet 7.2B expanded on this analysis by requiring the calculation of the median and interquartile range (IQR) for both diets. The IQR for Diet A was smaller than that of Diet B, further supporting the conclusion that Diet A produces more consistent results, as the data points are closer to the mean. This consistency reinforces the idea that Diet A is a more reliable choice for weight loss.

Worksheet 7.3D took a different approach, focusing on frequency and percentage analysis. The dataset revealed that the "Other" category had the highest frequency and percentage at 60%, while Category A had the lowest percentage at 16%. This highlighted the dominance of the "Other" category within the dataset and provided a clear picture of the distribution of categories.

Worksheet 7.4F was slightly more complex, as it required performing a t-test to compare the performance of two conditions, Con1 and Con2. The analysis revealed a statistically significant difference between the two, with Con1 being 13.2 units higher on average (172.6 vs. 159.4). This indicates that stores consistently perform better under Con1. A strong positive correlation (0.863) between Con1 and Con2 further showed that stores performing well under one condition also tend to perform well under the other. However, there was notable variability among stores, with some performing significantly better or worse under both conditions. These findings suggest that while Con1 is more effective overall, tailored strategies may be necessary for underperforming stores to improve their results.