

MET CS 555 Assignment 2 – 20 points

Spring, 2018

SUBMISSION REQUIREMENTS: Please submit a single document (word or PDF) for submission.

Your submission should contain a summary of your results (and answers to questions asked on the homework) as well as your R code used to generate your results (please append to the end of your submission).

An experiment was conducted to determine the effect of children participating in a given meal preparation on calorie intake for that meal. Data are recorded below. Save the data to a format that can be read into R. Read the data in for analysis. Use R to calculate the quantities and generate the visual summaries requested below.

- (1) Summarize the data by whether children participated in the meal preparation or not. Use an appropriately labelled table to show the results. Also include a graphical presentation that shows the distribution of calories for participants vs. non-participants. Describe the shape of each distribution and comment on the similarity (or lack thereof) between the distributions in each population.
- (2) Does the mean calorie consumption for those who participated in the meal preparation differ from 425? Formally test at the $\alpha = 0.05$ level using the 5 steps outlined in the module.
- (3) Calculate a 90% confidence interval for the mean calorie intake for participants in the meal preparation. Interpret the confidence interval.
- (4) Formally test whether or not participants consumed more calories than non-participants at the $\alpha = 0.05$ level using the 5 steps outlined in the module.
- (5) Are the assumptions of the test used in (4) met? How do you know?

Calorie Intake for participants

435.16
338.99
488.73
590.28
582.59
635.21
249.86
441.66
572.43
357.78

396.79
298.38
282.99
368.51
388.59
256.32
408.82
424.94
477.96
428.74
432.52
428.27
596.79
456.30
446.38

Calorie intake for non-participants

414.61
503.46
425.22
288.77
184.00
299.73
350.65
394.94
261.55
295.28
139.69
462.78
179.59
301.75
436.58
371.39
469.02
378.09
287.31
448.55
332.64
403.98