

Analysis of the Cereal Dataset

The nutritional content of 80 cereals samples of 77 different bands was obtained. The cereals' position on the shelf was recorded. We need analyze how the shelf was correlated with the cereals' sugars/serving.

From the scatter plot and the boxplot, we noticed that the middle position cereal seems have higher amount of sugars/serving. Then we checked the result of hypothesis testing about the mean of the amount of sugars/serving. The F-statistic is 6.60 and the p-value is 0.0023. Therefore, we do **NOT** have enough evidences to show that the mean amount of sugars/serving for each shelf are **indifferent**. In addition, as shown in the Figure 1 below, the estimated mean amount of sugars/serving for middle shelf is 9.6, which is significantly higher than the estimated mean amount for the low shelf (5.1) and top shelf (6.5). And the 95% confidence interval for the mean amount of sugars/serving is (7.8, 11.4), compared to low shelf (3.2, 7.0) and top shelf (5.2, 7.9). The cereals on the middle shelf have the highest mean of sugar/serving. The Low and top shelf seems have same mean.

Obs	shelf	95% CI lower bound	Estimated mean amount	95% CI Upper bound
1	low	3.2	5.1	7.0
2	mid	7.8	9.6	11.4
3	top	5.2	6.5	7.9

Figure1: It shows the estimated mean amount of sugars/serving for each shelf along with a 95% confidence interval for the population mean

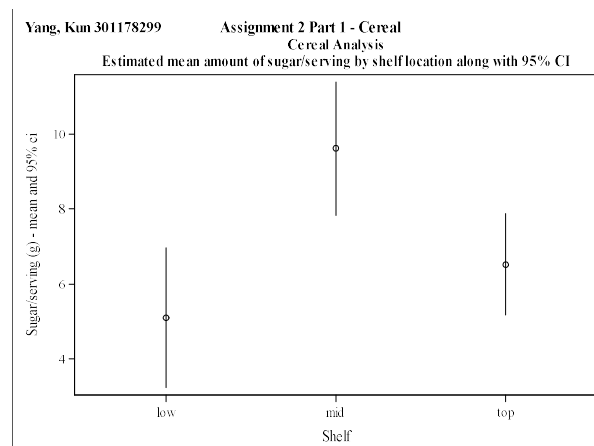


Figure2: The plot of the mean amount of sugar/serving by shelf with the 95% confidence intervals.