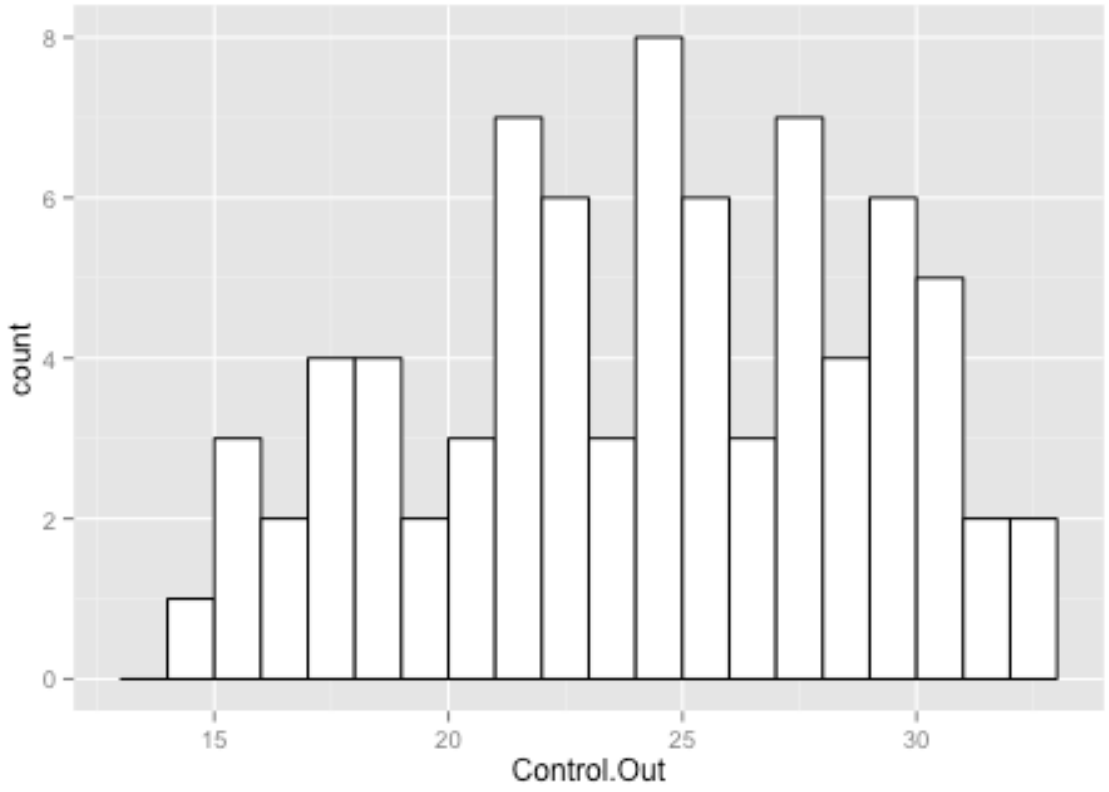
MSCA 31000 - Introduction to Statistical Concepts

Angry Moods Case

Q10: Plot a histogram of the distribution of the Control-Out scores.

Answer:



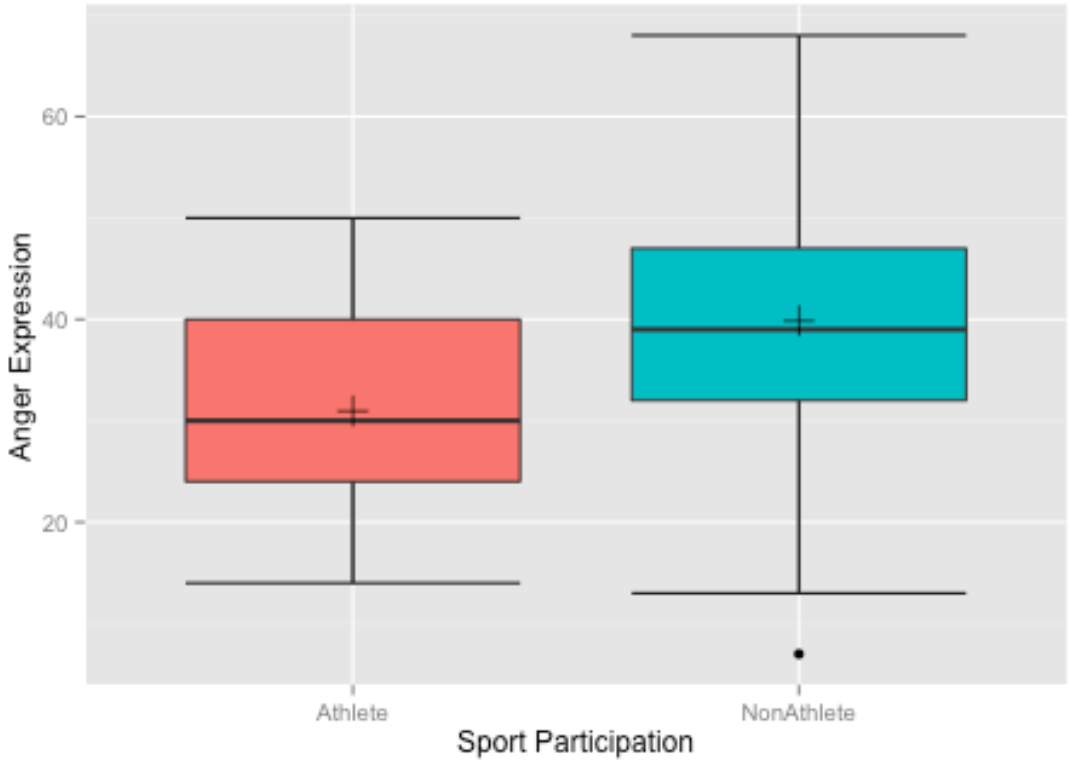
Q11: What is the overall mean Control-Out score? What is the mean Control-Out score for the athletes? What is the mean Control-Out score for the non-athletes?

Answer:

- Overall control out mean: 23.69231
- Athlete control out mean: 24.68
- Non Athlete control out mean: 23.22642

Q17: Plot parallel box plots of the Anger Expression Index by sports participation. Does it look like there are any outliers? Which group reported expressing more anger?

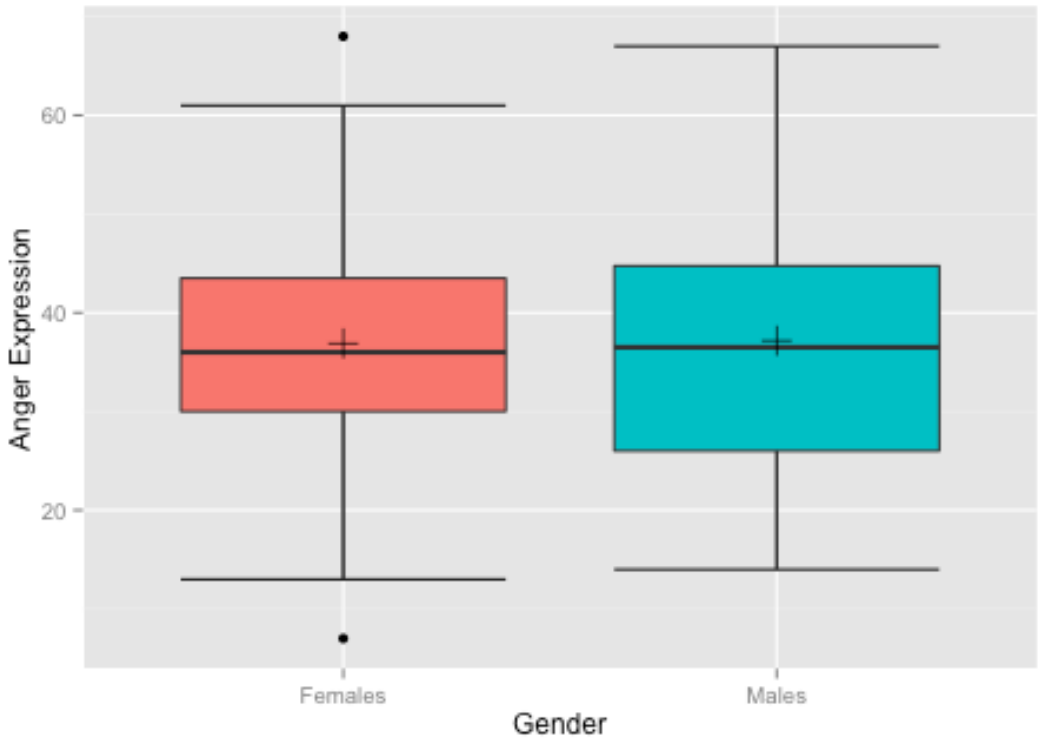
Answer:



The Non Athlete group has an outlier. The Non Athlete group reported expressing more anger.

Q18: Plot parallel box plots of the Anger Expression Index by gender.

Answer:



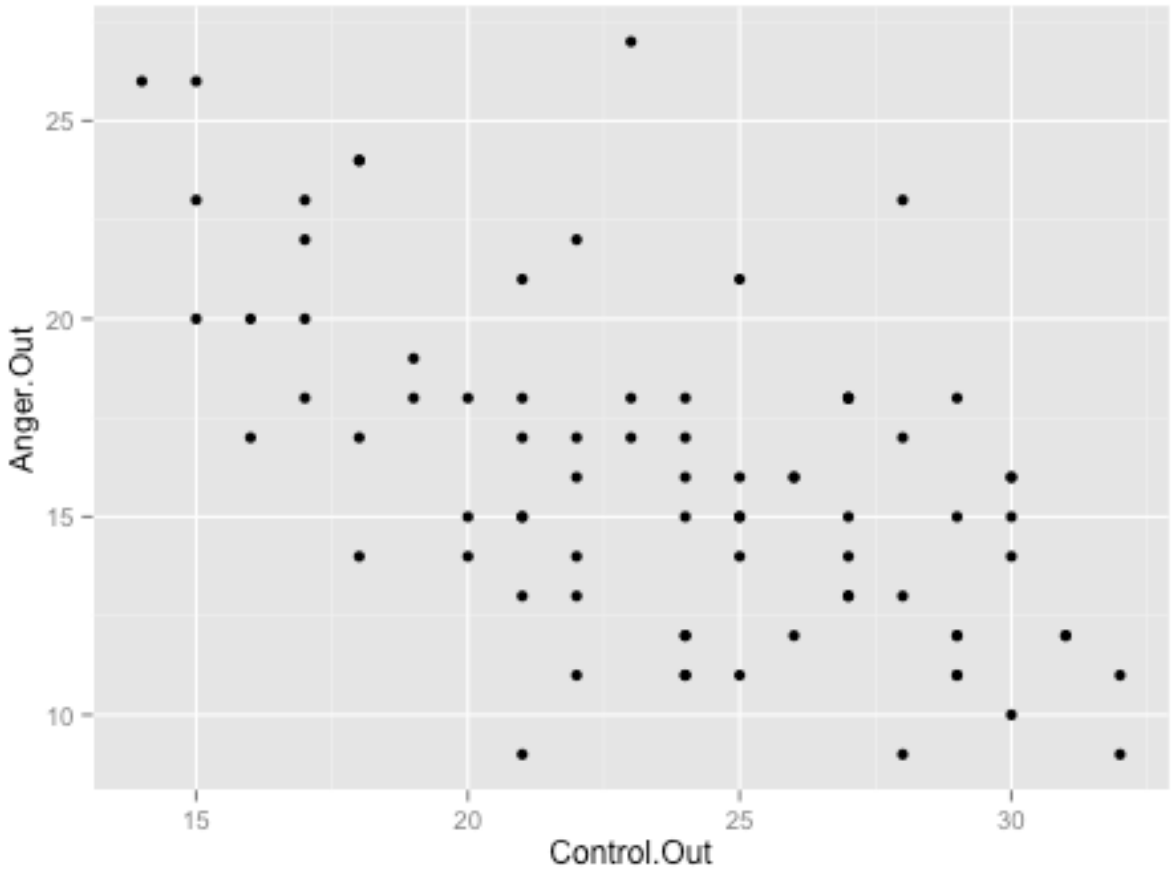
Q20: What is the correlation between the Control-In and Control-Out scores? Is this correlation statistically significant at the 0.01 level?

Answer: The correlation is 0.7192834. The correlation is statistically significant at the 0.01 level since the p-value is 1.19e-13.

Q21: Would you expect the correlation between the Anger-Out and Control-Out scores to be positive or negative? Compute this correlation.

Answer:

Based on the scatter plot of Control Out vs Anger Out variables, I expect the correlation to be negative.



As expected, cor(angerdata$Control.Out,angerdata$Anger.Out) gives output **-0.5826834**, which is the correlation for these two variables.