Stat 201: Statistics I
Week 9 StatCrunch

Metropolitan State University

Week 9
Inference for Numerical Data

Section 9.1
One sample hypothesis tests for means

Hypothesis tests for a mean in StatCrunch

- Stat $\rightarrow$ T Stats $\rightarrow$ One Sample $\rightarrow$ With Summary
  (or $\rightarrow$ With Data)
- Enter "Sample mean", "Sample std. dev." and "Sample size"
  (or select column which contains data)
- Select "Hypothesis test for μ"
- Enter the appropriate values for null and alternative hypotheses.
- Click "Compute!"
- The test statistic and p-value are found in "T-Stat" and "P-value"

Section 9.2
Two sample hypothesis tests for means

Hypothesis tests for two means in StatCrunch

- Stat $\rightarrow$ T Stats $\rightarrow$ Two Samples $\rightarrow$ With Summary
- Enter "Sample mean", "Sample std. dev." and "Sample size" for both samples
- Leave "Pool variances" unchecked
- Select "Hypothesis test for $\mu_1 - \mu_2$"
- The null hypothesis should always be $H_0 : \mu_1 - \mu_2 = 0$
- Enter the appropriate value for the alternative hypothesis.
- Click "Compute!"
- The test statistic and p-value are found in "T-Stat" and "P-value"

Confidence intervals for difference of means in StatCrunch

- Stat $\rightarrow$ T Stats $\rightarrow$ Two Samples $\rightarrow$ With Summary
- Enter "Sample mean", "Sample std. dev." and "Sample size" for both samples
- Leave "Pool variances" unchecked
- Select "Confidence interval for $\mu_1 - \mu_2$"
- Enter the appropriate confidence level.
  - Remember, for one-sided tests, the confidence level is (1 -2α)%.
- Click "Compute!"
- The confidence interval bounds are found in "L. Limit" and "U. Limit"

Section 9.3
Hypothesis tests for paired samples

Hypothesis tests for matched pairs in StatCrunch

- Stat $\rightarrow$ T Stats $\rightarrow$ Paired
- Select columns of data for both samples
- Select "Hypothesis test for $\mu_D = \mu_1 - \mu_2$"
- The null hypothesis should always be $H_0 : \mu_D = 0$
- Enter the appropriate value for the alternative hypothesis.
- Click "Compute!"
- The test statistic and p-value are found in "T-Stat" and "P-value"

Confidence intervals for matched pairs in StatCrunch

- Stat $\rightarrow$ T Stats $\rightarrow$ Paired
- Select columns of data for both samples
- Select "Confidence interval for $\mu_D = \mu_1 - \mu_2$" item Enter the appropriate confidence level.
  - Remember, for one-sided tests, the confidence level is (1 -2α)%.
- Click "Compute!"
- The confidence interval bounds are found in "L. Limit" and "U. Limit"