Module 18 Prep guide

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2-sample t-test

1. A 2-sample t-test is used when there two populations that are being sampled instead of just one.
2. The null hypothesis in a 2-Sample t-Test is H0: µ1 −µ2 = 0.
3. The parameter in a 2-sample t-test is focused on the difference in population means.
4. The statistic is xbar1-xbar2.
5. The test statistic is t =( ¯ x1−¯ x2−0)/(SQRT s2/p( 1 /n1 + 1 /n2) where s2 p = (n1−1)s2 1+(n2−1)s(2/2)/n1+n2−2.
6. The formula used to calculate a confidence region is (¯ x1 − ¯ x2) + t∗SQRTs2/p(1 n1 + 1 n2)
7. The parameter thought to be contained in the confidence region is to identify how much larger or smaller than the mean from one population is compared.
8. The assumptions are n1+n2>40,n1+n2-2>15 and each sample is not strongly skewed or each sample is normally distributed.
9. A levenes test is used to determine whether the two population variances are equal
10. Ho is rejected if the p value is greater than a.
11. A 2 sample t-test is used when there is a Quantitative response, two populations and individuals are independent between populations.
12. The data has to be stacked with two columns.
13. The R function is used to perform a 2-Sample t-Test with raw data is t.test(qvar~fvar,data=dfobj,alt=HAtype , conf.level=confval,var.equal=TRUE)
14. R function is used to perform the test for equal variances is levenesTest(qvar~fvar,data=dfobj).