

Twin Study

GROUP ASSIGNMENT

COMPARISON OF TWO DATA SETS

In a study we test the lifespan of 10 pairs of twins. Where one have been smoking and the other have not.

Table 1: Weight data.

Pair no.	Twin Non-smoker	Twin smoker
1	100	45
2	84	91
3	82	54
4	70	67
5	88	95
6	62	53
7	91	85
8	35	95
9	75	62
10	81	74

In this assignment, you have to find out what test to perform to compare the two sample sets. You should answer the following questions:

1. Estimate the mean and the variance of the population samples.
2. Find the mean of difference of the population samples.
3. Formulate the NULL hypothesis to test whether the two samples come from populations with the same mean.
4. Formulate the alternative hypothesis to the NULL hypothesis.
5. What statistical test would you perform to test the hypothesis?
6. Calculate the test-statistics.
7. Should the test be paired or unpaired?
8. Can you based on your chosen statistical test, reject the hypothesis?
9. Do you get a difference for paired and un-paired tests?
10. Find the 95% confidence interval for the difference in the means.
11. Based on the samples, what would the difference of the population means?