1. What is our independent variable? What is our dependent variable?

Independent Variables:

1. *congruent words Condition*

2. incongruent words Condition

Dependent Variables:

1. Time taken to name the link colors

2. What is an appropriate set of hypotheses for this task? What kind of statistical test do you expect to perform? Justify your choices.

Ho : µc (time taken by population to read congruent words) = µIC ((time taken by population to read incongruent words)

HA : µc (time taken by population to read congruent words) != µIC ((time taken by population to read incongruent words)

Point estimate = µc - µIC = **14.05 – 22.02 = -7.97**

The kind of statistical test is dependent t-test for paired samples

3. Report some descriptive statistics regarding this dataset. Include at least one measure of central tendency and at least one measure of variability.

|  |  |
| --- | --- |
| **Mean of difference** | **-7.96** |
| **variance** | **87.63** |
| **Standard Deviation** | **9.36** |
|  |  |

4. Provide one or two visualizations that show the distribution of the sample data. Write one or two sentences noting what you observe about the plot or plots.

The chart shows that time taken to read the incongruent word is high than congruent word.

5. Now, perform the statistical test and report your results. What is your confidence level and your critical statistic value? Do you reject the null hypothesis or fail to reject it? Come to a conclusion in terms of the experiment task. Did the results match up with your expectations?

**t-statistic = -4.17**

**for                  alpha = 0.05 , t-statistic is +- 2.064**

**Cohens D = -0.85**

**Confidence interval CI = (-11.91, -4.02)**

**For the current sample, t-statistic is past the critical value of alpha = 0.05, so we are rejecting the null hypothesis.**

**So the incongruent words are making the population to take less time to read the incongruent words.**