

Test a Perceptual Phenomenon

[Student Notes](#) [Project Review](#)

Does Not Meet Specifications

Question 1: Identify variables in the experiment



SPECIFICATION

Question response correctly identifies the independent and dependent variables in the experiment.

MEETS SPECIFICATION

Question 2: Establish a hypothesis and statistical test



SPECIFICATION

An appropriate hypothesis test has been stated along with an appropriate statistical test to apply to collected data, with appropriate justification.

DOES NOT MEET SPECIFICATION

Reviewer Comments

There are some issues though to be addressed to complete your good work:

1. A more precise statement of the null and alternative hypothesis is required: Being able to formulate an exact and thorough statement of the null hypothesis is extremely important for a prospect data scientist.
2. Some further details over the test choices need to be provided.

I'll guide you throughout the whole process, hope my suggestions will prove helpful:

Hypothesis statement:

Quoting from answer 2: "Incogurent words condition make people take a longer time to say the correct words than the congruent words condition." Which variables are we comparing, for which purpose? Are we comparing the population means? Are we comparing the sample means of time? This last option would be wrong: We already know what the sample means are, as we computed them, so there would be no point in testing the difference.

hypothesis
d by X), and

from that limited data, we are trying to infer something about the **population** (generally denoted by U) we don't know about.

 Resubmit Project

How satisfied are you with this feedback?

With our test we are trying to assess whether the sample means are different because the **two populations and population means are different** or just by chance.

Therefore our hypothesis should be concerned with μ_C and μ_I , respectively the congruent and incongruent population means and should (optionally) be followed by some comments discussing the aforementioned statistical inference process.

Over the hypothesis statement and meaning: <http://support.minitab.com/en-us/minitab/17/topic-library/basic-statistics-and-graphs/hypothesis-tests/basics/what-is-a-hypothesis-test/>

Please remind as well that it is common practice to state the null hypothesis with the case you mean to reject.

Providing thorough rationale for test choices:

Which test applicable? There are potentially several tests applicable when comparing means (t-test and z-test are for sure candidates) the choice should depend on the relevant assumptions.

1. We have less than 30 samples.
2. We don't know the population's standard deviation.
3. We assume that the distributions are Gaussian.

<http://www.statisticshowto.com/when-to-use-a-t-score-vs-z-score/>

<http://support.minitab.com/en-us/minitab/17/topic-library/basic-statistics-and-graphs/hypothesis-tests/tests-of-means/types-of-t-tests/>

Are you choosing a one tail or a two tailed test? Why? (This info could be inferred from your alternative hypothesis but should anyway be stated explicitly)

<http://support.minitab.com/en-us/minitab/17/topic-library/basic-statistics-and-graphs/hypothesis-tests/basics/directional-and-nondirectional-hypotheses/>

<http://support.minitab.com/en-us/minitab/17/topic-library/basic-statistics-and-graphs/hypothesis-tests/basics/what-is-a-critical-value/>

Could you please explicitly detail if you are choosing a dependent or independent sample test and why?

https://en.wikipedia.org/wiki/Student%27s_t-test#Unpaired_and_paired_two-sample_t-tests

Question 3: Report descriptive statistics



SPECIFICATION

Descriptive statistics, including at least one measure of centrality and one measure of variability, have been computed for the dataset's groups.

MEETS SPECIFICATION

Question 4: Plot the data



SPECIFICATION

One or two visualizations have been created that show off the data, including comments on what can be observed in the plot or plots.

MEETS SPECIFICATION

Question 5: Perform the statistical test and interpret your results



SPECIFICATION

A statistical test has been correctly performed and reported, including test statistic, p-value, and test result. The test results are interpreted in terms of the experimental task performed.

DOES NOT MEET SPECIFICATION

Reviewer Comments

Please provide a rationale for your statistical test choices: Though the assumption of normality is accepted in this submission, I'd understand if you would like to carry on a more sophisticated analysis deciding to use a non parametric test (like the Mann Whitney). It would be fine provided you discuss a proper rationale for it.

Question 6: Digging deeper and extending the investigation



SPECIFICATION

Hypotheses regarding the reasons for the effect observed are presented. An extension or related experiment to the performed Stroop task is provided, that may produce similar effects.

MEETS SPECIFICATION

 [Download project](#)



Best practices for your project resubmission

Ben shares 5 helpful tips to get you through revising and resubmitting your project.

[▶ Watch Video](#) (3:01)



review.

Have a question about your review? Email us at review-support@udacity.com and include the link to this

NANODEGREE PROGRAMS

[Front-End Web Developer](#)

[Full Stack Web Developer](#)

[Data Analyst](#)

[iOS Developer](#)

[Android Developer](#)

[Intro to Programming](#)

[Tech Entrepreneur](#)

STUDENT RESOURCES

[Blog](#)

[Help & FAQ](#)

[Catalog](#)

[Veteran Programs](#)

PARTNERS & EMPLOYERS

[Georgia Tech Program](#)

[Udacity for Business](#)