



PROJECT

Test a Perceptual Phenomenon

A part of the Data Analyst Nanodegree Program

PROJECT REVIEW

NOTES

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Meets Specifications

Dear student,

Congratulations on finishing this difficult project! Good job! Your work definitely shows your strong statistical reasoning ability. Remember that all the hard work will pay back. Keep up your good work! :)

Responses to Project Questions

Q1: Question response correctly identifies the independent and dependent variables in the experiment.

Q2a: Null and alternative hypotheses are clearly stated in words and mathematically. Symbols in the mathematical statement are defined.

Good job describing the null and alternative hypotheses. Note that the tricky part is that the hypotheses are used to make inferences about the population rather than the samples.

Q2b: A statistical test is proposed which will distinguish the proposed hypotheses. Any assumptions made by the statistical test are addressed.

Good job!

Two-tailed t-test is fine for this question. Good job! However, the one-tailed test would be better as there are reasons to assume directionality beforehand (e.g., the incongruent condition will take significantly longer than the congruent condition). Please refer to these links for more information:

- [What is a hypothesis test](#)
- [Dependent and independent t-tests](#)
- [Directional and nondirectional hypotheses](#)

Q3: Descriptive statistics, including at least one measure of centrality and one measure of variability, have been computed for the dataset's groups.

Q4: One or two visualizations have been created that show off the data, including comments on what can be observed in the plot or plots.

Good job showing the distribution of the dataset. Another plot to look into is the [box plot](#), which can better show the difference of the two conditions.

Q5: 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.

Good job doing the statistical test and interpret corresponding results. More precisely, we can say there is a significant difference in the mean task completion times between the two conditions.

Q6: 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.

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