

Statistical Methods in Anthropology

Anthropology 372/572

Guide for Problem Set write-ups

Thus far, problem sets have focused primarily on the visual display of data sets, tendencies of centrality and dispersion, and the “math” behind t-tests and the normal distribution. However, for the remaining part of the semester, problem sets will present anthropological problems or issues that you will answer more formally in a mini write-up. You will be given an issue or question along with a data set. You will then be required to answer that question by forming a hypothesis of interest and testing it using an appropriate statistical test. Much more than simply “math”, these problem sets will require a formal introduction to the issue, your methods for evaluating your hypothesis, and a conclusion. All write-ups will be **typed and double spaced at 12 point font** and performed in Minitab or some other statistical software of choice. Be sure to insert all data sets, descriptive statistics, graphical displays of data, equations, and results when necessary (and where necessary). Below is a general three-part guide to your write-ups.

Part I. *Introduction to the problem and a description of your data set.* In this section, you will present the anthropological question of concern and introduce the reader to your data set. This will consist of a short paragraph describing the question at hand. What is the issue? What does your data set consist of? What does your data set look like (visual description of data)? What is the conceptual relationship of the data set to the anthropological question?

- A brief introduction to the problem
 - A description of your data set and visual depiction (descriptive statistics, graphic presentation)
 - Conceptual “bridge” between data and question
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Part II. *Descriptive and formal construction of your hypothesis and test.* Now that you have established *what* it is you are trying to learn, you can provide a descriptive hypothesis to inform the reader of *how* you will answer your question. Define your statistical sample or populations formally. Remember, a description of your hypothesis is in plain English, perhaps in a few sentences, i.e., what is it you are actually testing? Next, state your formal hypothesis in terms of H_0 , H_a , and your alpha value. Finally, what is an appropriate statistical test to solve your problem? Why (think about the different options available in the suite of hypothesis tests)? Feel free to include the applicable equations as well.

- A formal presentation of your sample statistics or population parameters
 - A description of your hypothesis
 - A formal presentation of your hypothesis (H_0 : and H_a plus your alpha value)
 - Present an appropriate statistical test to solve your question
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Part III. *Descriptive and formal construction of your results.* In this section you will perform your statistical test of your hypothesis and state your results (perhaps re-state your formal hypothesis followed by your results, i.e., reject or fail to reject the null). Include the procedural steps you followed in MINITAB. Be sure to include all applicable results of your test as performed in Minitab or any other statistical software. Finally, discuss the results in a short paragraph. What do they mean with respect to the anthropological question at hand?