How to Write up an Experiment

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In this section, you describe how you plan to test whether your proposed explanation has any empirical support. There are several steps to writing this section. First, you need to justify why your methodological approach is the appropriate approach for testing your hypothesis and comparing its explanatory strength to that of other explanations. Second, you then need to describe how you intend to implement this approach. Third, you need to present the findings.

Justify your Choice of Methodological Approach There are several basic types of research designs that might be appropriate to test your hypothesis and comparing its explanatory strength to that of other explanations. Examples include Large-n statistical analysis, Qualitative case studies, Game-theoretic models, and experimental studies, among others. In the first step, you should justify *why* an experimental study is the most appropriate to test your hypothesis. Briefly discuss the various strengths and weaknesses of alternative methodological approaches, and explain why for your particular topic an experiement is best suited.

Setting Describe the setting in which you conducted your experiment. In particular, answer the following questions:

- Sample: Who was invited to participate in your experiment (students, voters, politicians, etc.)? How were they invited? Did you provide incentives for participation?
- Implementation: Where did the experiment take place (in a lab, online survey, phone survey, person-to-person interview, etc.)? How did you ensure that the recruitment strategy did not affect your results?
- Assignment procedure: How did you assign who was in the the treatment versus the control group?
- Formal requirements: Did you obtain IRB approval?

Treatment and Control Explain the treatment that the treatment group received. First, detail what you want to accomplish with the treatment: What real-life situation do you intend to replicate in the experimental setting? What type of information do you want to provide with the treatment? Second, describe the form of the treatment: Will you provide a text to read, a picture, a graph, a table with data, a video, etc? Regardless of the form, describe the characteristics of that treatment in detail (which colors, what language, etc.). In addition, detail how the information received by subjects in the treatment group differs from that in the control group. Be specific about the differences in both form and content. Explain how the information the treatment and control groups will receive relate to your hypothesis.

Data collection Third, explain how you collected data on subject responses.

- Dependent variable: How did you measure the outcome in the context of the experiment? What kind of variable did you obtain (categorical, continuous, count, duration, etc.) How did you attempt to minimize measurement error?
- Independent variables: Based on the design of the study, what are the independent variables?
- Control variables: What information did you collect about your participants (age, occupation, etc.)? Provide summary statistics of relevant population characteristics across treatment and control groups.

Methodology Discuss the statistical methodology that you used to analyze your data. Many different methods are possible. The appropriate method for your analysis depends on the type of your dependent variable (continuous variable? categorical variable? count? duration? etc.) and the type of question you want to answer. Whichever method you choose, justify why it is the appropriate methodological approach for your research question. Following the justification, write up the full equation of your model. Using this equation, explain how the model can provide evidence in support of your hypothesis.

Summarize your findings In a first step, provide some descriptive statistics of the answers to your questions across treatment and control group. Do their answers differ significantly? In a second step, present the findings of your statistical analyses. For example, you could calculate the average treatment effect, etc. Interpret your finding so that readers understand whether the experiment provided support for your argument. Lastly, conduct some robustness tests to ensure that the findings are in fact convincing. For example, you might conduct sub-sample analyses to see whether the treatment effect is conditional on population characteristics.