

Doing the Article Analysis

Soc 357
Fall 2006

Due Dates

- TUESDAY Dec. 3: Have article ready
*** **EARLIER IS BETTER!**
- THURSDAY Dec. 5: Bring to class to workshop
- MONDAY Dec. 18: Paper Due by 1pm

Goals of the Assignment

- Think of this as a take-home test, not an opinion-essay
- Goal is to apply the concepts you have learned in the course

Tips on Selecting an Article (1)

- Use one of the Article Databases on the Library Website (Social Science Index, Sociological Abstracts, etc.).
- DO NOT use popular databases like "Findarticles.com"

Tips on Selecting an Article (2)

- Choose an article that uses a method we have studied this semester (observation, surveys, experiment)
- It must describe **original data collection** conducted by the author(s); this is especially important for survey data.
- See <http://library.wisc.edu/>

Article Analysis: Steps in Execution

1. Intro – summary of problem, data source & findings
2. Evaluate Construct Validity of measures of variables
3. Evaluate Internal Validity
4. Evaluate External Validity
5. Overall Evaluation

1. Intro/Summary

- State the research question and/or hypothesis
- Describe the source of the data
- Describe the Results

Interpreting Results: Statistics

- If you are looking at a statistical study, you will have to report on the statistical results
 - Report on whether the hypothesized association between two variables is confirmed or disconfirmed by the statistical results
 - Statistics might include differences of means, correlations, or multiple regression
 - **Look for the "Probability-Value" in all of these**

Interpreting P-values

- Probability-values
 - Accompany almost every statistic you will see
 - Refer to the probability that the statistical association in the results **does not** match an association in the actual population
 - I.e. The chance that by the luck of the draw, the sample in the study is biased or unreflective of the true population
- **ONLY** relevant if working with data from a random sample

P-values con'td

- If the question is, "what are the chances that my sample doesn't match the population?"
- You want the answer to be: "The chances are LOW"
- P-values of .05, .02 and .01 are considered low enough (.05 = 5/100 chance; .02 = 2/100 chance; .01 = 1/100 chance)
- Interpretation: the association we see in our sample is credible evidence that the association is actually there in the population
- We say the results are "*statistically significant*"

Difference of Means

- The mean value for one category of the independent variable is different than the mean value of another category
 - E.g. Men vs. Women mean time spent studying
- The difference is often measured by a t-statistic
- The significance of the t-statistic is described using a p-value

Correlations

- Correlations refer to the association between **two** variables
 - I.e. How much a change in one variable is associated with a change in another variable
- The significance of correlations is measured by a **p-value**

Multiple Regression

- Used where you want to examine the relationship between **many** independent variables and the dependent variable
- Estimates the contribution of each variable to the outcome, controlling for the effects of all the other variables in the regression

Example: Why we control for the effects of other variables

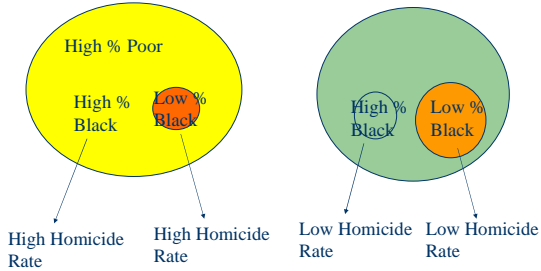
- Baron & Straus article: Correlations (p. 134)
 - % Black and homicide rates: $r = .63$
 - % Below poverty line & homicide rates: $r = .43$

Both of these correlations have p-values that are statistically significant; we would guess that both have an effect on the homicide rate.

Example cont'd

- Baron & Straus article: Regressions (p. 135)
 - **% Below poverty line**: p-value for coefficient is significant
 - we are confident that there is a real association between % poor & homicide rate in the population
 - **% Black**: p-value for coefficient is NOT significant
 - when we hold poverty level constant – the relationship between % black & homicide goes away

Holding “% Poor” constant – checking to see if the relationship between % Black & Homicide Rate holds true, in both High % Poor & Low % Poor states



Multiple Regression Cont'd

- Tables present an “unstandardized coefficient” – estimation that for a one-unit increase in each independent variable, the dependent variable changes by the amount in the coefficient
- A “standardized coefficient” lets you compare the relative effects of the independent variables
- The significance of coefficients is indicated by a **p-value**

Interaction Effects

- When two variables together affect a dependent variable differently than either one of them would on its own
 - Eg. Alcohol & sleeping pills: either one will make you sleepy, but taken together, they *interact* and knock you out.
 - Eg. Ransford's study: Powerlessness & Dissatisfaction – taken together, they increase the likelihood of violence by more than if you added up the individual effects of each

Interpreting Results: Qualitative Data

- Just as in statistical research “Results” are statements about patterns in the population
 - Either documenting the variety of phenomena
 - E.g. Ewick & Silbey Variety of stories of resistance
 - E.g. Adler & Adler, career paths in drug dealing
 - Or hypothesizing about a relationship between variables
- Your job is to evaluate if the authors give enough evidence to justify this hypothesis or pattern

Evaluating Construct Validity - 1

- List all the operationalized (measured) variables in the research, and indicate briefly how they relate to the variables of theoretical interest
- Talk about what author says about the decisions that went into measuring each variable the way that they did

Evaluating Construct Validity - 2

- State **exactly** how data were measured, including rules for assigning each observation to a category of a variable
- Make it clear you understand the difference between a **VARIABLE** and a **CATEGORY**
- Include multiple measures of the same variable
 - E.g. Horn honking article – THREE operationalizations of dependent variable
 - Honked or not
 - Number of honks (0, 1, 2)
 - Seconds before first honk (#s)

Evaluating Construct Validity - 3

- Explain how original variables are combined or modified
 - Explain construction of index or scale here

Evaluating Construct Validity - 4

- State your evaluation of how good you think the measurement is
 - Does it really measure the concept that the author wants to investigate
 - Is the measurement reliable – will it produce consistent results if applied again?
 - OK if you like some measures more than others

Evaluating Internal Validity - 1

- Internal Validity refers to the idea that you have ruled out alternative explanations for the results
 - In experimental research, we use control methods & randomization to rule out alternative explanations
 - In statistical research, we “control” for variables that might present alternative explanations
 - In qualitative research, we discuss evidence that might support conclusions other than our own

Evaluating Internal Validity - 2

- Is there a statistically significant association between the two variables of interest?
- Is there a good justification for assuming the direction of causality ?
 - ie. Do they explain why $A \rightarrow B$ rather than $B \rightarrow A$
- What variables do they control for?
- Are there other variables that were not controlled that might be producing the results we see?

Evaluating External Validity - 1

- Discuss the sampling procedures (units of analysis, population of theoretical interest, actual population, sampling frame, etc.)
- Evaluate the sampling procedures
 - Do the restrictions on the population seem justified?
 - Were units of analysis selected randomly?
 - Does author overstep in terms of how generalizable findings are?

Overall Evaluation

- Summarize your evaluation of the methods – what things were done well, what things were done poorly
- Discuss how well methods and results fit with the theoretical claims of the author
- Discuss possible ethical issues
- Discuss what you learned from the article that might be worth knowing. I.e. Was the research worth the effort?

Tips on Writing

1. Vocabulary

Use the vocabulary we have acquired to describe what's going on in the article

- E.g. "It doesn't fit with my experience"
= **Face Validity**
- E.g. Sampling where each element has the same probability of being chosen
= **Random sampling**

2. The more detail, the better

- Never answer simply "yes" or "no" to a question
- Always link up methodological terms with something going on in the article; don't just throw them in there.
- Use precise language to describe what's going on in your article, not a vague or evasive answer

3. Don't assume the author is using correct terms

- Don't just take the terms the author uses as correct, without checking to see how s/he describes her procedures
 - E.g. Ransford article: says he uses "disproportional stratified sampling" when actually he chooses clusters (neighborhoods) **purposively**, chooses blocks within neighborhoods **randomly**, and then chooses households **purposively** on blocks
 - Look for term "**random methods**" rather than "**random sample**" as a clue that samples are not perfectly random

4. It's ok to acknowledge ambiguity

- If the article isn't clear about some information required by the review, you get credit for saying what's missing
 - E.g. What we did with Browne & Gans articles
 - But you have to say what you think including a particular piece of information would tell you
- If you are ambivalent about something, it's ok to express that, but be detailed.

Evaluation

- Questions of fact (like what kind of sampling was used) will be evaluated by comparing article to what you wrote
- Questions of opinion will be graded according to whether
 - You take some position
 - You defend your position by raising issues discussed in class
