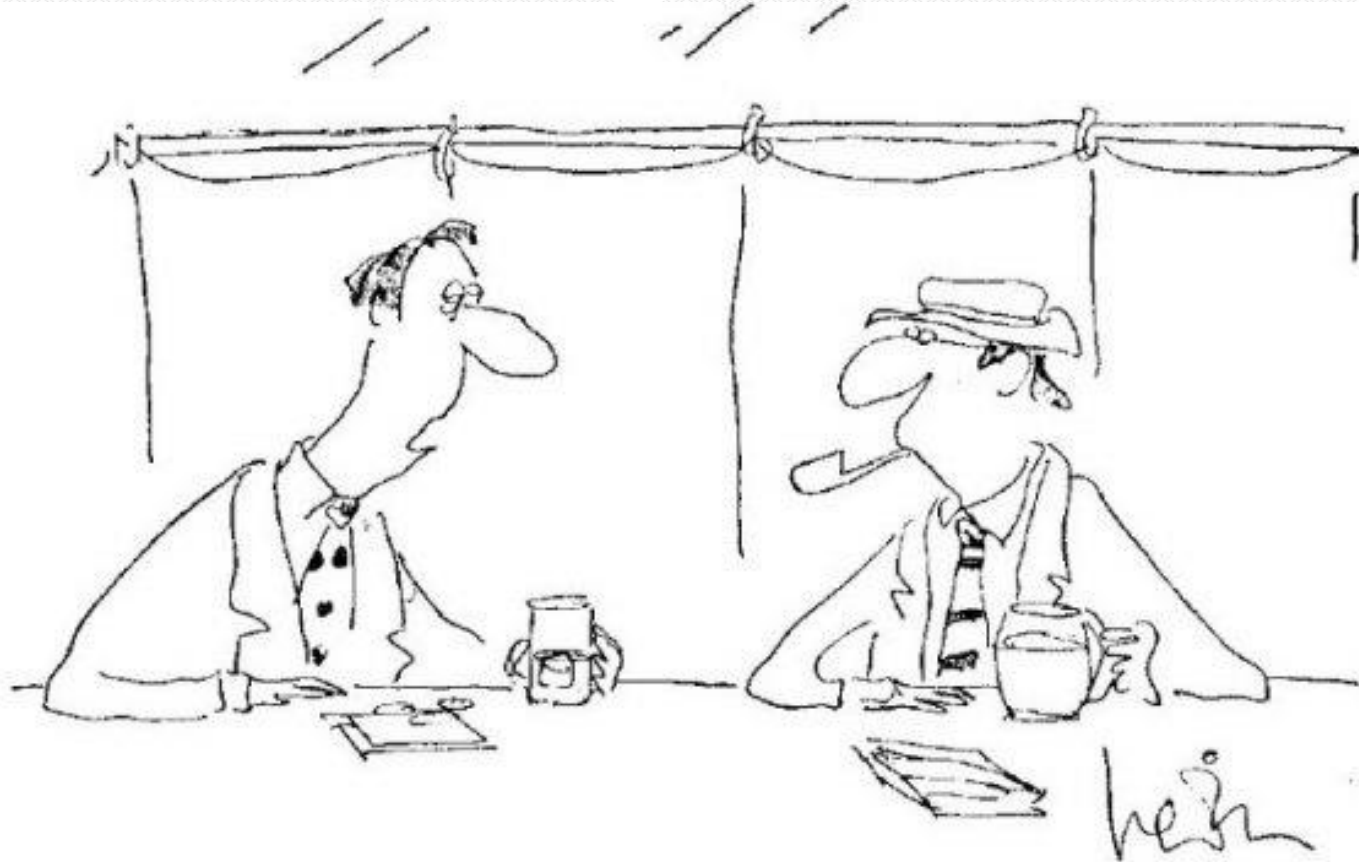


Choosing the Correct Statistical Test



“Well, I’ll be damned if I’ll defend to the death your right to say something that’s statistically incorrect.”

SPSS Overview

2

- **Overview of SPSS (6:11)**
 - http://calcnnet.mth.cmich.edu/org/spss/V16_materials/Video_Clips_v16/01overview/01overview.swf
- **Open Files in SPSS: SPSS, Excel, Text Files (8:27)**
 - http://calcnnet.mth.cmich.edu/org/spss/V16_materials/Video_Clips_v16/04open_files/04open_files.swf
- **Getting Started: How to enter/edit data (8:44)**
 - http://calcnnet.mth.cmich.edu/org/spss/V16_materials/Video_Clips_v16/02getting_started/02getting_started.swf
- **Define/Modify a Variable (6:33)**
 - http://calcnnet.mth.cmich.edu/org/spss/V16_materials/Video_Clips_v16/05variable_view/05variable_view.swf
- **File Manipulation: Sort, Merge, Transpose (6:27)**
 - http://calcnnet.mth.cmich.edu/org/spss/V16_materials/Video_Clips_v16/06file_manipulation/06file_manipulation.swf
- **File Manipulation: Select Cases, Split File (5:59)**
 - http://calcnnet.mth.cmich.edu/org/spss/V16_materials/Video_Clips_v16/07file_manipulation2/07file_manipulation2.swf
- **Transformation of Variables: Compute & Recode (10:03)**
 - http://calcnnet.mth.cmich.edu/org/spss/V16_materials/Video_Clips_v16/08transformations/08transformations.htm

How Do I Know Which Statistical Test to Use?

3

- **THINGS TO CONSIDER**

- **How many variables do I have**

- ✦ How many IVs are there?
- ✦ How many DVs are there? (typically, there is just one)

- **What Types of Variables do I have?**

- ✦ Is the IV(s) continuous or categorical?
- ✦ Is the DV continuous or categorical?



How Do I Know Which Statistical Test to Use?

4

- **Continuous** (sometimes called quantitative variables):
Called **Scale** data in SPSS.
 - Interval or ratio data where the values can change continuously and you cannot count the number of different values. (e.g., weight, price, profits, counts, etc.)
- **Categorical** (sometimes called qualitative, discrete, or dichotomous variables): Called **Ordinal** and **Nominal** data in SPSS.
 - Ordinal are ratio data are values that have a meaning to the order or are in categories, such as ranking TV programs or colors.

Bivariate Statistics

5

- Used to examine the relationship between **two variables**
- Typically examined at one point in time (cross-sectional)

IV	DV	Analysis
Continuous	Continuous	<u>Correlation</u>
Categorical (Can be more than two groups)	Categorical (Can be more than two groups)	<u>Chi-Square</u>
Categorical (2 groups)	Continuous	<u>Independent Samples T-Test and Dependent (Paired) Samples T-Test</u>
Categorical (>2 groups)	Continuous	<u>One-Way Between Subjects ANOVA and One-Way Within Subjects (Repeated Measures) ANOVA</u>

Multivariate Statistics

6

- Used to examine the relationship between **≥ 3 variables**
- Can be cross-sectional or longitudinal

IV1	IV2	DV	Analysis
Continuous	Continuous	Continuous	<u>Regression</u> and Path Analysis (Beyond the Scope of this Class)
Continuous	Continuous or Categorical	Continuous	<u>Stepwise Regression</u> and Hierarchical Regression (Controlling for a variable, doesn't matter if controlled variable categorical or continuous)
Continuous (1 or more)	Categorical (1 or more)	Categorical	<u>Logistic Regression</u>
Categorical	Categorical	Categorical	<u>Log-Linear Model</u>
Categorical	Categorical	Continuous	<u>2 X 2 ANOVA</u> and <u>One-Between-One-Within ANOVA</u>
Categorical	Categorical or Continuous	Continuous	<u>ANCOVA</u> (Controlling for a variable, doesn't matter if controlled variable categorical or continuous)
Categorical (1 or more IVs)	Categorical (Optional)	Continuous (2 or more)	<u>MANOVA</u>

LAB

7

- Using the “Choosing Your Analysis” Handout from week 4 as an aid complete the following Labs:
 - Complete the “Class Survey Lab Activity” worksheet
 - Complete “Data Entry, Importing, & Analysis” worksheet
 - Collaborate on Research Projects
 - **Consent forms Due Friday**
 - **Research Project Paper Rough Drafts Due Before Class Tuesday March 27**
 - ✦ Abstract, Introduction, Method, Possible Outcomes/Discussion Sections & Reference Sections (50 pts)