

# CHOOSING YOUR ANALYSES

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## ANALYSIS SECTION

- Proposal Outline
  - Last Section of Methods Section
  - Usually labeled as “Analysis” or “Statistics”
  - Restate your hypothesis
  - State the direction of your predicted results
  - Indicate the analyses you will use to test your hypothesis
  - Explain strange things that might have happened with your data (i.e., throwing out data, centering your data for moderation, any transformation of your data, how you looked for outliers, etc.)
- Final Paper Outline
  - Results Section (after Methods section)
  - Give descriptive statistics using a table (Means, Standard Deviations, Ns)
  - Give main results
  - Give and any secondary analysis
- Things to Consider
  - Is the IV continuous or categorical?
  - Is the DV continuous or categorical?
  - You can compare your results to past studies to see if you have similar results. It’s called normative data. If I’m presenting a depression score, how do I know if it’s high or low compared to other scores from past studies? Discussion of past studies are typically discussed in the measures section in the proposal and final paper and then compared to your study’s results in the statistics section of your final paper.
  - Examples for writing up results: [http://my.ilstu.edu/~mshesso/apa\\_stats.htm](http://my.ilstu.edu/~mshesso/apa_stats.htm)
  - Online SPSS Statistical Tutorials: <http://calnet.mth.cmich.edu/org/spss/toc.htm>

**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.)

- Interval variables that can be measured along a continuum and they have a numerical value (for example, temperature measured in degrees Celsius or Fahrenheit). However, temperature measured in degrees Celsius or Fahrenheit is NOT a ratio variable. (Ex: Intelligence, aptitude, temperature)
- Ratio variables are interval variables, but with the added condition that 0 (zero) of the measurement indicates that there is none of that variable. So, temperature measured in degrees Celsius or Fahrenheit is not a ratio variable because 0 C does not mean there is no temperature. However, temperature measured in Kelvin is a ratio variable as 0 Kelvin (often called absolute zero) indicates that there is no temperature whatsoever. (Ex: Reaction time, weight, age, frequencies of behavior)

**Categorical** (sometimes called qualitative, discrete, or dichotomous variables): Called **Ordinal** and **Nominal** data in SPSS.

- Ordinal data that has a distinct order. There’s a meaning to the order. (Ex: two, three, and four star restaurants, Ranking TV programs by popularity)
- Nominal data are distinct groups with no meaning to the order. (e.g., sex, states, colors, etc.)

## BIVARIATE ANALYSIS

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

<b>IV</b>	<b>DV</b>	<b>Analysis</b>
Continuous	Continuous	<a href="#">Correlation</a>
Categorical (Can be more than two groups)	Categorical (Can be more than two groups)	<a href="#">Chi-Square</a>
Categorical (2 groups)	Continuous	<a href="#">Independent Samples T-Test and Dependent (Paired) Samples T-Test</a>
Categorical (>2 groups)	Continuous	<a href="#">One-Way Between Subjects ANOVA and One-Way Within Subjects (Between Subjects) ANOVA</a>

## MULTIVARIATE ANALYSIS

- Used to examine the relationship between  $\geq 3$  variables
- Can be cross-sectional or longitudinal

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