

# Intro to Social Science Data Analysis

## Research Question Design & Data Download

**Christopher Gandrud**

November 21, 2012

- 1 Research Project: Goals
- 2 Paper Structure
- 3 Research Question & Research Design
- 4 Assignment 4

## Quick Quiz 1

What are the three minimum criterion for establishing a **causal relationship**?

## Quick Quiz 2

Why do we often need to use tools for **statistical control**?

What is the main tool we learned last week for statistical control?

## Quick Quiz 3

What is a reference category?

## Quick Quiz 4

Why do King et al. (2000) recommend simulating expected outcomes and graphing the results?

### Goals:

With a partner, answer a **social science research question** primarily using the **data analysis tools** covered in this course.

Present your results in both a:

- ▶ **short paper** (max 1,000 words),
- ▶ **short presentation** (max 15 minutes).

As always, it must be **reproducible**.

# Schedule

We are dedicating **all** of the class time for the rest of the course to the research project.

## Schedule:

- ▶ Week 13: Research question, design, & data download,
- ▶ Week 14: Statistical Analysis & Results Visualization,
- ▶ Week 15: Write up.
- ▶ Week 16: Presentations.



# Schedule

We are dedicating **all** of the class time for the rest of the course to the research project.

Schedule:

- ▶ Week 13: Research question, design, & data download,
- ▶ Week 14: Statistical Analysis & Results Visualization,
- ▶ Week 15: Write up.
- ▶ Week 16: Presentations.

# Schedule

We are dedicating **all** of the class time for the rest of the course to the research project.

Schedule:

- ▶ Week 13: Research question, design, & data download,
- ▶ Week 14: Statistical Analysis & Results Visualization,
- ▶ Week 15: Write up.
- ▶ Week 16: Presentations.

# Schedule

We are dedicating **all** of the class time for the rest of the course to the research project.

Schedule:

- ▶ Week 13: Research question, design, & data download,
- ▶ Week 14: Statistical Analysis & Results Visualization,
- ▶ Week 15: Write up.
- ▶ Week 16: Presentations.

# Schedule

We are dedicating **all** of the class time for the rest of the course to the research project.

Schedule:

- ▶ Week 13: Research question, design, & data download,
- ▶ Week 14: Statistical Analysis & Results Visualization,
- ▶ Week 15: Write up.
- ▶ Week 16: Presentations.

# Pair Research Project

## Due:

- ▶ Paper: 18 December
- ▶ Presentation: 19 or 20 December

## Due:

- ▶ Paper: 18 December
- ▶ Presentation: 19 or 20 December

# Paper Structure

Your paper should have the following structure:

- ▶ **Introduction:** Research Question, Thesis Statement, Paper Outline.
- ▶ **Literature Review:** Brief discussion of previous research on this topic (including possible alternative explanations).
- ▶ **Data & Methods:** Describe the data you collected (sources, variable meaning) & the methods that you use to test your hypothesis.
- ▶ **Results:** Show and discuss you results.
- ▶ **Conclusion:** Wrap up & discuss your research **limitations**.

# Paper Structure

Your paper should have the following structure:

- ▶ **Introduction:** Research Question, Thesis Statement, Paper Outline.
- ▶ **Literature Review:** Brief discussion of previous research on this topic (including possible alternative explanations).
- ▶ **Data & Methods:** Describe the data you collected (sources, variable meaning) & the methods that you use to test your hypothesis.
- ▶ **Results:** Show and discuss you results.
- ▶ **Conclusion:** Wrap up & discuss your research **limitations**.



# Paper Structure

Your paper should have the following structure:

- ▶ **Introduction:** Research Question, Thesis Statement, Paper Outline.
- ▶ **Literature Review:** Brief discussion of previous research on this topic (including possible alternative explanations).
- ▶ **Data & Methods:** Describe the data you collected (sources, variable meaning) & the methods that you use to test your hypothesis.
- ▶ **Results:** Show and discuss you results.
- ▶ **Conclusion:** Wrap up & discuss your research **limitations**.

# Paper Structure

Your paper should have the following structure:

- ▶ **Introduction:** Research Question, Thesis Statement, Paper Outline.
- ▶ **Literature Review:** Brief discussion of previous research on this topic (including possible alternative explanations).
- ▶ **Data & Methods:** Describe the data you collected (sources, variable meaning) & the methods that you use to test your hypothesis.
- ▶ **Results:** Show and discuss your results.
- ▶ **Conclusion:** Wrap up & discuss your research **limitations**.

# Paper Structure

Your paper should have the following structure:

- ▶ **Introduction:** Research Question, Thesis Statement, Paper Outline.
- ▶ **Literature Review:** Brief discussion of previous research on this topic (including possible alternative explanations).
- ▶ **Data & Methods:** Describe the data you collected (sources, variable meaning) & the methods that you use to test your hypothesis.
- ▶ **Results:** Show and discuss your results.
- ▶ **Conclusion:** Wrap up & discuss your research **limitations**.

# Presentation Structure

## Note:

Your presentation's structure will mostly be the same as your paper's.

This week:

You will develop your research question and the research design you will use to try to answer it.

This is **Assignment 4**.

# Assignment 4

Due: Friday 30 November

## Research Design

With your partner plan your research by answering the following questions:

1. What **difference** do you want to explain?
2. What is your **best guess** explanation (i.e. thesis statement)?
3. Can you **test your hypothesis using data**? If so, what data do you need to collect and what tests could you use?
4. What **rival explanations** are their?
5. How could you use data to test whether your best guess or the rival explanations are better? Write this as an **equation**.

Questionnaire from: modified from Cheryl Schonhardt-Bailey

# Assignment 4

Due: Friday 30 November

## Research Design

With your partner plan your research by answering the following questions:

1. What **difference** do you want to explain?
2. What is your **best guess** explanation (i.e. thesis statement)?
3. Can you **test your hypothesis using data**? If so, what data do you need to collect and what tests could you use?
4. What **rival explanations** are their?
5. How could you use data to test whether your best guess or the rival explanations are better? Write this as an **equation**.

Questionnaire from: modified from Cheryl Schonhardt-Bailey

# Assignment 4

Due: Friday 30 November

## Research Design

With your partner plan your research by answering the following questions:

1. What **difference** do you want to explain?
2. What is your **best guess** explanation (i.e. thesis statement)?
3. Can you **test your hypothesis using data**? If so, what data do you need to collect and what tests could you use?
4. What **rival explanations** are their?
5. How could you use data to test whether your best guess or the rival explanations are better? Write this as an **equation**.

Questionnaire from: modified from Cheryl Schonhardt-Bailey



# Assignment 4

Due: Friday 30 November

## Research Design

With your partner plan your research by answering the following questions:

1. What **difference** do you want to explain?
2. What is your **best guess** explanation (i.e. thesis statement)?
3. Can you **test your hypothesis using data**? If so, what data do you need to collect and what tests could you use?
4. What **rival explanations** are their?
5. How could you use data to test whether your best guess or the rival explanations are better? Write this as an **equation**.

Questionnaire from: modified from Cheryl Schonhardt-Bailey

# Assignment 4

Due: Friday 30 November

## Research Design

With your partner plan your research by answering the following questions:

1. What **difference** do you want to explain?
2. What is your **best guess** explanation (i.e. thesis statement)?
3. Can you **test your hypothesis using data**? If so, what data do you need to collect and what tests could you use?
4. What **rival explanations** are their?
5. How could you use data to test whether your best guess or the rival explanations are better? Write this as an **equation**.

Questionnaire from: modified from Cheryl Schonhardt-Bailey