

# Research Basics and Research Design II

Methodology of Conflict and Democracy Studies

September 27

# Aim of this lecture

- Empirical part of the research
- Research design – main components
- How to present your design

# Step by Step

1. Topic and goals (*+ reading*)
2. Research questions (*+ reading*)
3. Hypotheses (*+ reading*)
4. Methods (*+ reading*)
5. Data collection
6. Data analysis
7. Results



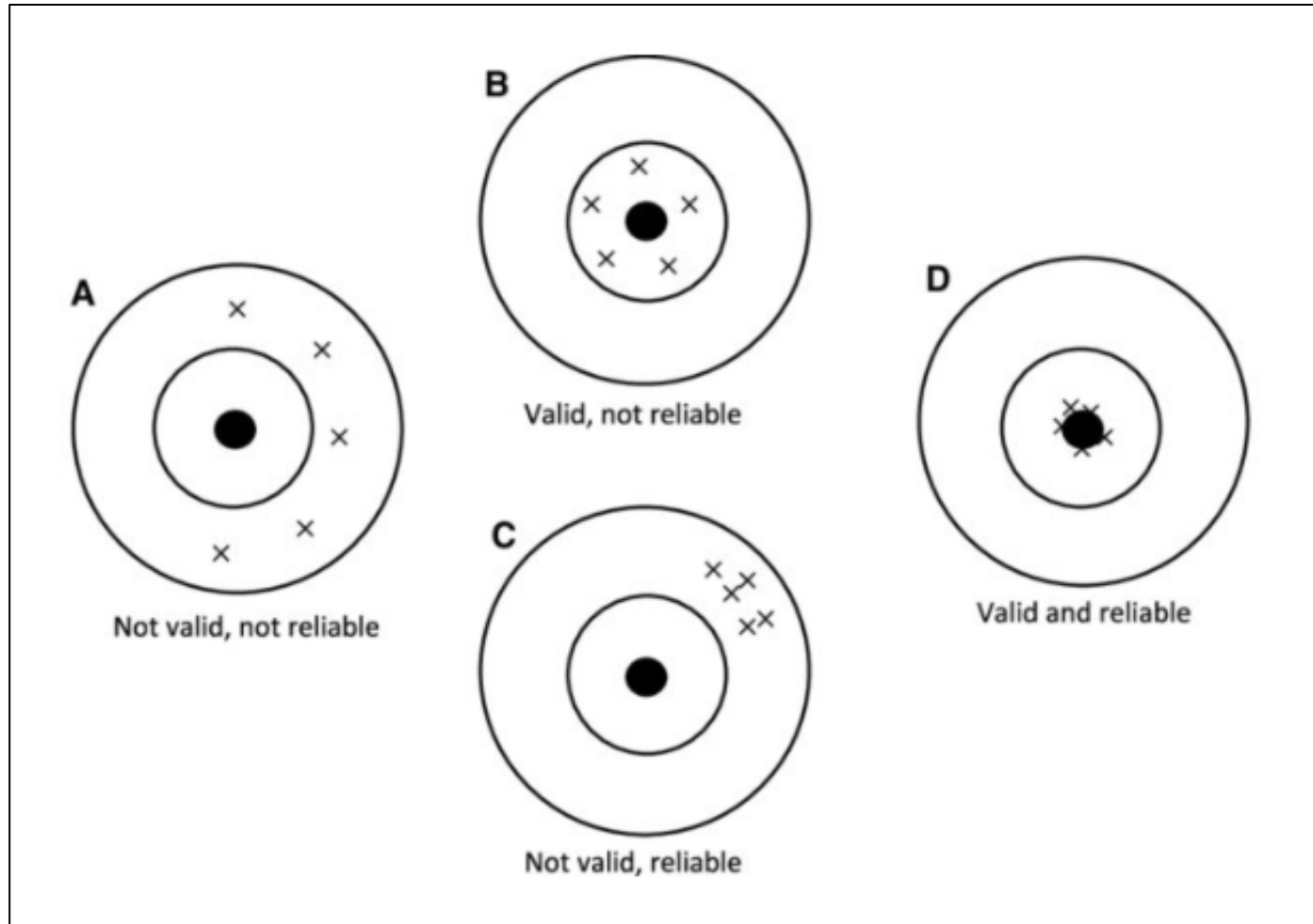
# After the Planning is Done

- What comes next:
  - Data collection
  - Data analysis
- Applies to both qualitative and quantitative research
- Data and methods link your ambitions with your results

# Before we Start

- Validity
  - We measure what we aim and are supposed to measure
  - Invalid measure – measuring something different than originally intended
  - Importance of operationalization
  - Any thoughts of bad examples?
- Reliability
  - A measure of a concept is reliable to the extent that it is repeatable
  - If we use same measurement under same conditions, we should gain identical results
  - Important for checking and repeating previous research
  - Importance of transparency

# Validity and Reliability



# Strategy of Your Research

- How to search for causality?
- Methods always depend on your aims and ambitions
- Two main strategies:
  - Experiments
  - Observational studies

# Experiment

- Consider the following:

You own a media and PR company. You made a contract with a clothing producer that hires you to increase its sales. You prepare four different commercials. What should the clothing producer do to maximize its profit?

- The answer – the producer should run an experiment



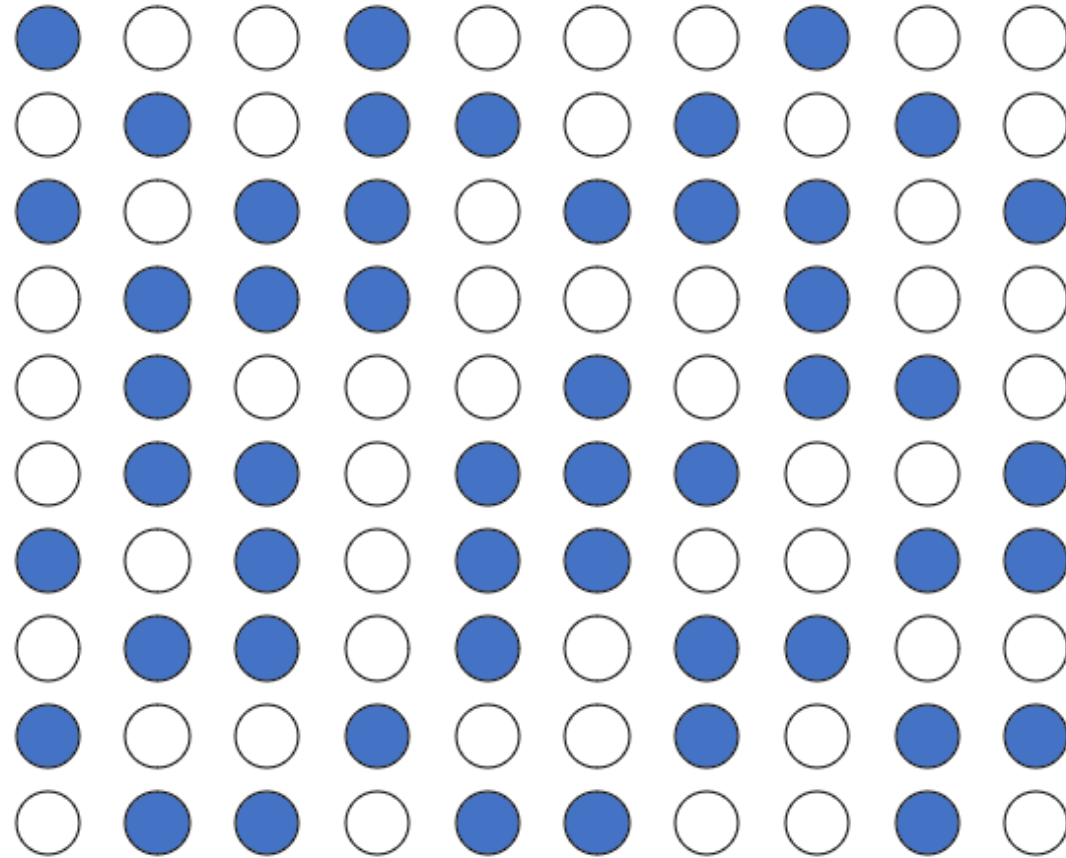
# Experiment

- Estimation of effect of IV on DV by effectively controlling for effects of all other confounding variables
- The researcher manipulates with the independent variable
- Experimental group (at least one) and control group

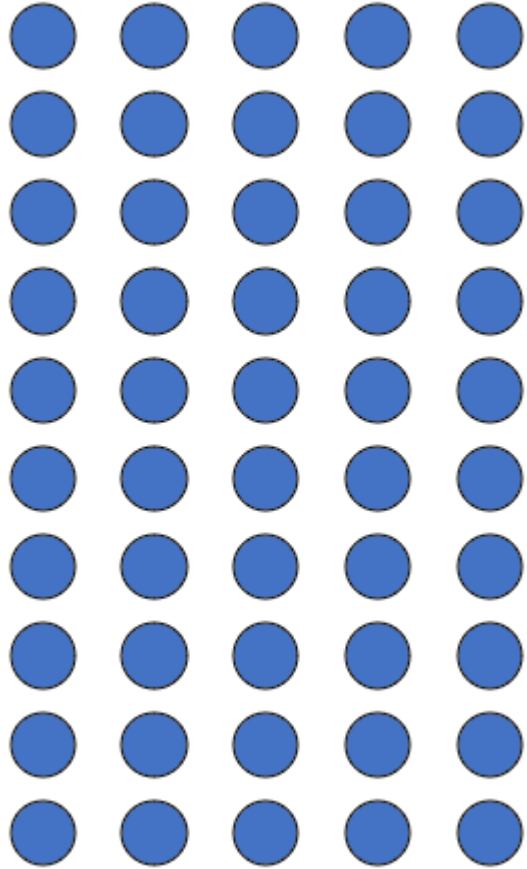
# Experiment

- Does corruption lower trust in elected representatives?
- Laboratory experiment, 2 groups (experimental and control)
  - Exp Grp: Video with corruption of a political official
  - Ctrl Grp: Video with the political official in daily duties
- Sample of 100 people
- How to divide the sample into groups?

50 men (blue dots), 50 women (white dots)

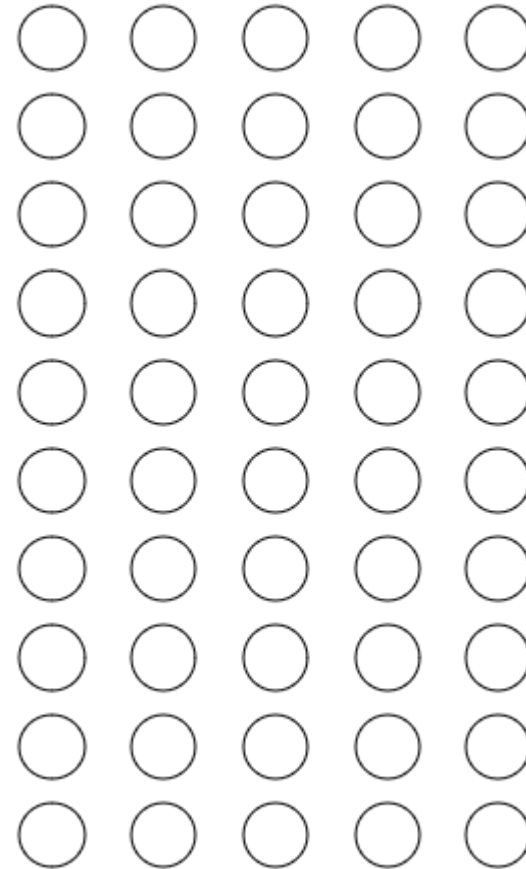


# Wrong Solution



Experimental group:

50 M, 0 W



Control group:

0 M, 50 W

# Post experimental questionnaire

- On a scale from 0 to 10 how do you trust the political official?
- Experimental group (50 M, 0 W):
  - Result: 4.2
- Control group (0 M, 50 W):
  - Result 6.7
- **The result** – watching a video with corrupt practices lowers trust to political officials

# Post experimental questionnaire

- On a scale from 0 to 10 how do you trust the political official?

- Exp

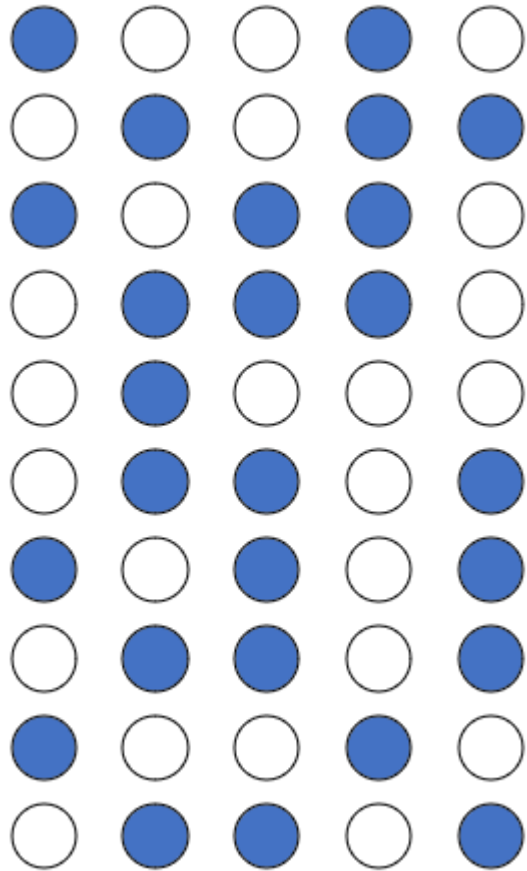
**What if the video has no effect but men simply have lower trust in politicians?**

- Control group (0 M, 50 W):

- Result 6.7

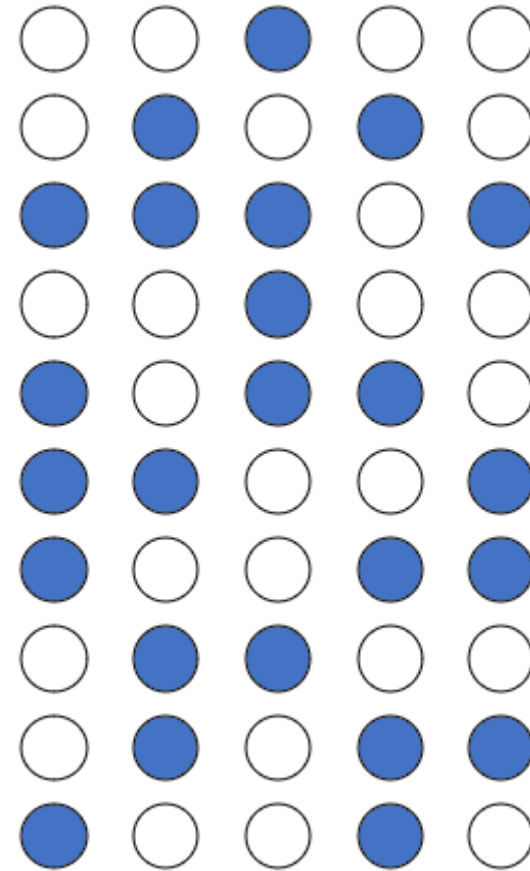
- **The result** – watching a video with corrupt practices lowers trust to political officials

# Correct Solution



Experimental group:

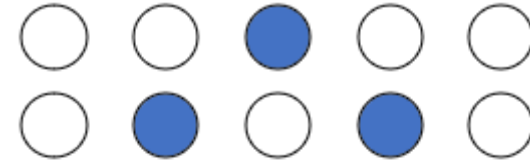
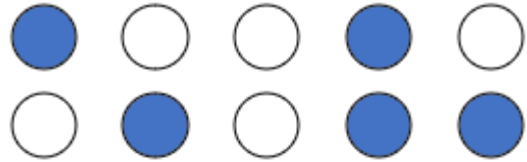
26 M, 24 W



Control group:

24 M, 26 W

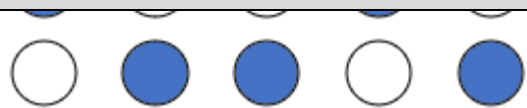
# Correct Solution



All differences (that can affect the results, e.g. age, income, education) are eliminated.

The only difference between the groups is our treatment (the video).

If the video has an effect, we will see it in different scores of groups and vice versa.



Experimental group:

26 M, 24 W



Control group:

24 M, 26 W



# Experiment

- Estimation of effect of IV on DV by effective controlling for effects of all other confounding variables
- The researcher manipulates with the independent variable
- Experimental group (at least one) and control group
- Random assignment as a necessity
- Random assignment vs. random sampling

# Experiment

- Several types:
  - Laboratory experiment
  - Field experiment
  - Natural experiment (quasi-experiment)
- Strengths:
  - Effective isolation of other variables
  - Reliability, internal validity
- Weaknesses:
  - External validity (vs. experiments based on population sample)
  - Not always applicable in social sciences
  - Not all independent variables are subject of manipulation
  - Need of replication

# Transparency at the Local Level

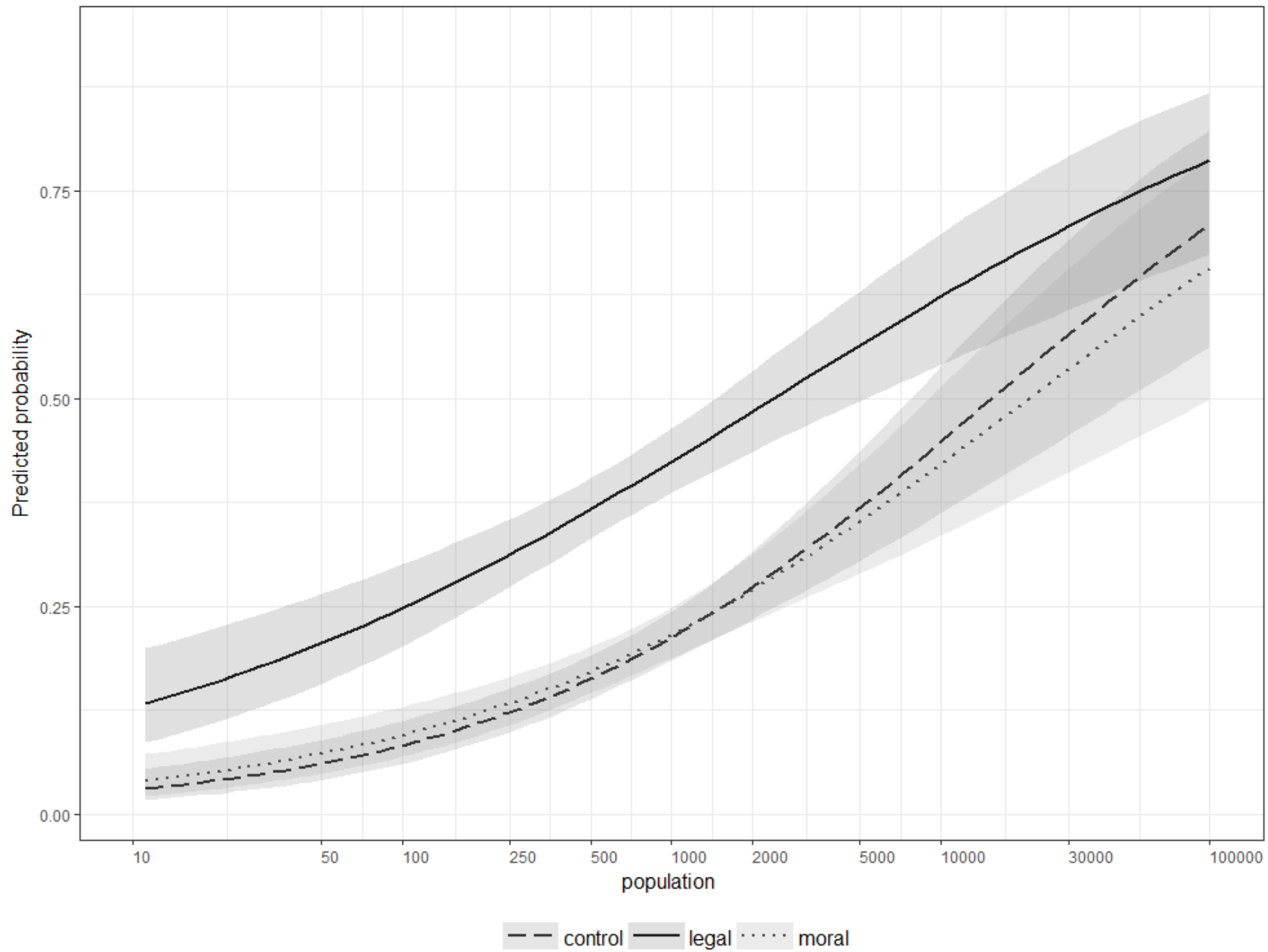
- Topic: Reactive provision of information by local governments
- Effect of Freedom of Information (FOI) requests on responsiveness of local governments compared to less formal requests
- Experimental study on 2,926 municipalities in Slovakia
- Requests on information about local elections

# Preparation of Experiment

- Random assignment of municipalities into three groups
- All municipalities obtained an information request
- Control group – baseline version
- Exp group 1 – baseline + moral paragraph
- Exp group 2 – baseline + FOI paragraph
- All requests sent via e-mail on Monday

# Results

- FOI requests double responsiveness of municipalities
- Higher response rate found among larger towns and towns with independents and female mayors
- The effect of content of requests strongly moderated by population size



# Experiment with Oranges and Discrimination



# Observational studies

- It does not mean that the researcher stands and physically observes the research object with a binocular
- Researchers observe the reality as it is - they do not manipulate with any variables and they have no control over the values of variables
- Lesser control over other confounding variables (compared to experiment)
- Time-series and cross-sectional studies



# Qualitative and Quantitative Research

- Both have their strengths and weaknesses
- None is superior to the other (although opinions vary)
- Different methods and approaches, but the same aims

# Qualitative and Quantitative Research

- Case study:
  - Typically a study of a single case
  - Aim is to gain deep and detailed knowledge of the phenomena
- Statistical Analysis:
  - Large N studies
  - A variety of techniques that allow testing hypotheses on relations between variables
- Comparative Method:
  - Somewhere in between, when you lack enough cases for a statistical analysis
  - Example - QCA

# Work with Data

- Large number of techniques and approaches
- The choice depends on research aims and data availability
- Interview vs. survey:
  - Deep understanding vs. standardized questionnaire
  - Number of cases
  - Length of data collection
  - Differences in data analysis
- Content analysis, discourse analysis, QCA, regression analysis (linear, logistic, multilevel, polynomial...)

# Research Ethics

- Always be aware of potential problems with ethics
- Milgram's experiment with false electricity shocks
- Character of questions in a questionnaire
- Informed consent of research participants

# Limits of Your Research

- There is no *“one research to rule them all”*
- Every research contains limits:
  - What cannot be analyzed
  - Is the found relationship between variables important in the real world?
  - Are there any obstacles that limit your research?
- Be transparent on limits

# Research Design

- Basic points:
  - Selection of the topic and your aims
  - Previous theory
    - What is already known
    - Gaps in the literature
  - Questions (and hypotheses)
  - Data and Methods
  - Ethics and limits
- Always explain – Why do you have such a research question? Why is it important to study your case? What is the added value of your research?