

# Research Methods in the Study of Europe and Germany (54699)

## Lesson 5

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# Structure of the Class

- 1. Testing Hypotheses (Assignment)**
- 2. Causal Mechanisms**
- 3. Research Design**
- 4. Methodology**



# Testing Hypotheses



# Testing Hypotheses

- **Predictions** from theory, to be confirmed or falsified.
- Hypotheses explain the relationship between variables:

**How / Why IV affect DV.**

- Several potential answers.



# Hypothesis - The 3 conditions:

1. **Is there a relationship between the variables? (correlation)**
2. **Is this a real relationship or a fake relationship? (alternatives)**
3. **Does the independent variable (A) precede the dependent variable (B) in time? (causal mechanism)**

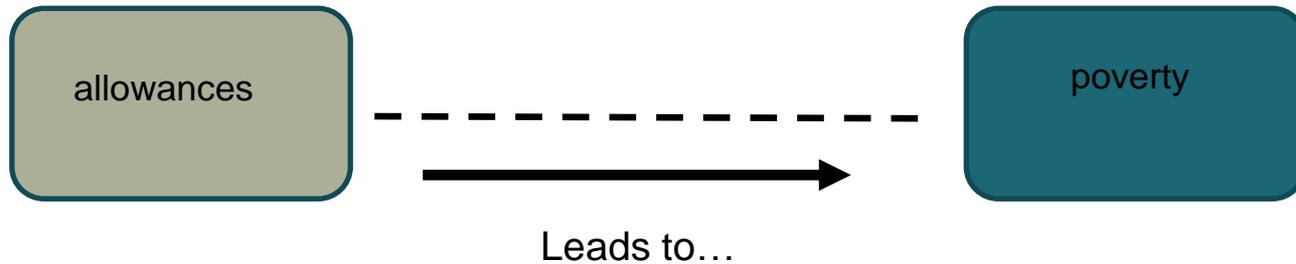


# Causal Mechanisms



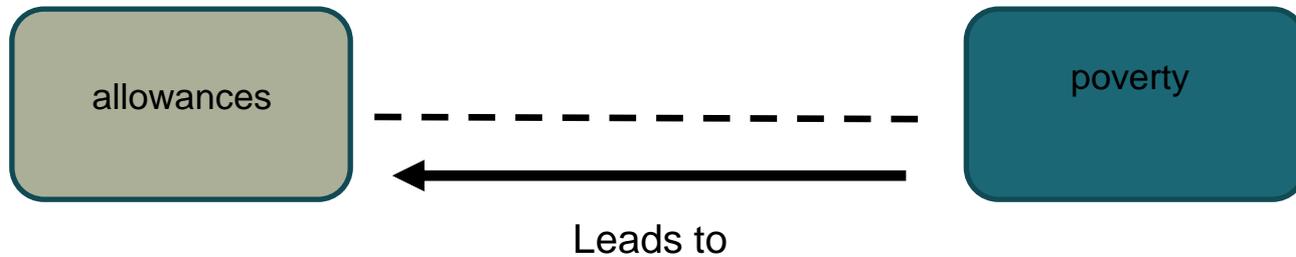
# Hypothesis – Relationship between Variables

## Causal mechanism



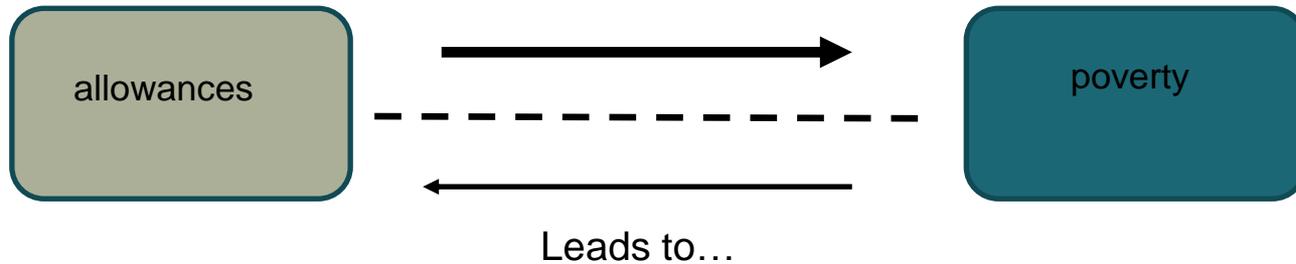
# Hypothesis – Relationship between Variables

## Inverse causal mechanism



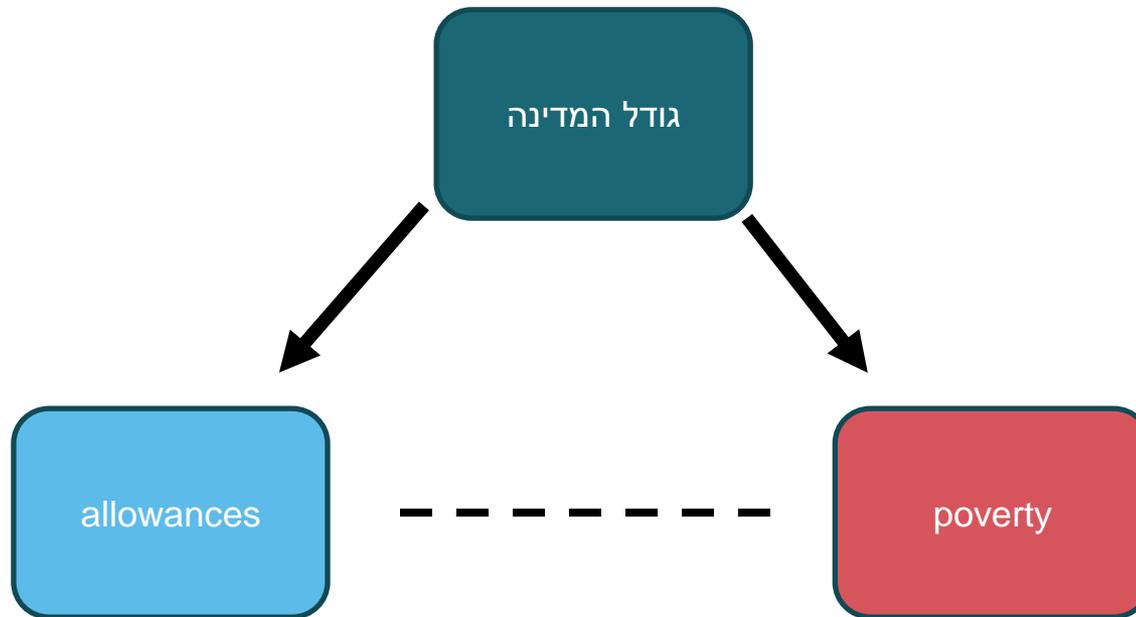
# Hypothesis – Relationship between Variables

## Feedback cycle



# Hypothesis – Relationship between Variables

## Intervening variable



# Hypothesis – Relationship between Variables

- No relationship
- Fake relationship
- Confounder / lurking variable



# Research Design



# The Scientific Process

- Developing an idea for research - PUZZLE
- Elaborate a question to answer – RESEARCH QUESTION.
- Consolidate expected responses - HYPOTHESES
- Design research & define strategy - METHODOLOGY
- DATA COLLECTION & ANALYSIS – are findings consistent with hypothesis?
- CONCLUSIONS - Change and expansion? Is it possible to confirm the hypothesis? Make changes? Further research?



# Research Design

1. The research design is the way(s) in which we plan to answer the research question we set, and test the hypotheses we formulated.
2. Different designs have different advantages and disadvantages.
3. In light of this, the trend in research in recent years is to combine different designs/methods and thus benefit from the advantages and compensate for the disadvantages of each of them.



# Research Design

## Two main characteristics of a well-designed research:

- *Internal Validity*

High internal validity indicates that the findings are accurate and correct in the examined case. We measured our variables properly, that we found real and not simulated/false relationships.

- *External validity:*

Can our findings be generalized to a larger number of cases? If we did an experiment on a group of students, is there a good reason to believe that what we found is also true for other people?



# Research Design

Two main types of research designs

- *Qualitative Research*

Research based on a small number of cases and verbal analysis.

- *Quantitative Research*

Studies based on a large number of cases and quantitative/statistical analysis.



# Methodology



# Variables / indicators - Conditions

1. Conceptual clarity

2. Reliability

3. Validity

a) Internal

b) External



# Conceptual clarity

- Good measurement starts with clear, well-defined concepts.
- Vague concepts lead to poor measurement:
  - Unclear.
  - Ambiguous
- That is why it is important to define well the concept being tested (conceptualization + operationalization).



# Reliability

- **Consistency (will give us the same value in every measurement).**
- **Generally relevant for 3 situations:**
  1. Several indicators for the same variable (ex. political positions)
  2. The same index tested at different points in time.
  3. The same index is coded by different people (inter-coder reliability).



# Validity

- **How “true” the measurement is (of what it is intended to measure)**
  - *Content validity*: how comprehensive the indicator is – includes all aspects of the concept? (ex. Democracy)
  - *Construct validity*: How well does the indicator measures what it is intended to measure? (the higher the correlation, the higher the validity).
- **Internal & External Validity.**



# Wrapping Up

## When reading/writing research, ask yourself:

- ✓ Are the key concepts clearly defined? Where did the definitions come from?
- ✓ Is it possible to find or think of alternative definitions for the same concept? Does the concept contain the right number of aspects?
- ✓ What is the unit of analysis? What is the measurement scale? Is this the best scale? Why or why not?
- ✓ Are the measures of each concept reliable? Valid?



# Next Class

- **Lesson 6)**
  - Gathering sources
  - Speeches.
  - Interviews.
  - Polls.
  - Media texts.



# Thanks!

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