



Lecture 9: Measurements in Empirical Research

Research Methods

Lecture 9

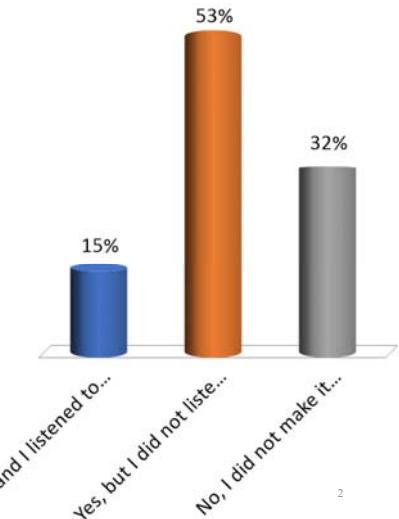
Did you go to the climate march on Friday?

1. Yes, and I listened to all speeches
2. Yes, but I did not listen to all speeches
3. No, I did not make it or did not plan to go



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Which subfield in political science interests you most?

1. Political Theory
2. International Relations
3. Canadian Politics
4. Comparative Politics- Developed
5. Comparative Politics- Developing
6. Other or do not know

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Plan for today

One comment on getting out the vote experiments

Measurements

Unit of analysis

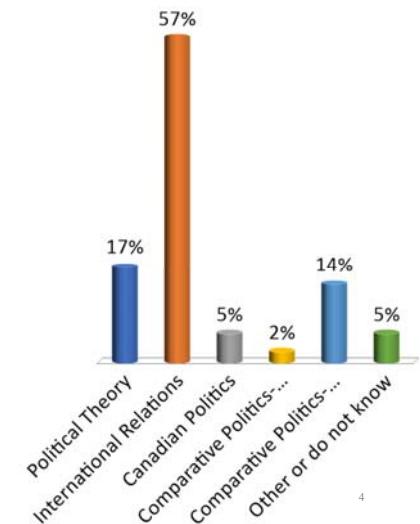
From Concepts/ Concept Definitions → Operational Definitions → Indicators

Accuracy, precision and levels of our measurements

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Getting out the Vote Experiments Effect Size versus number of people reached

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What do you think is the most effective way to increase voter turnout?

- Face-to-Face canvassing
- Volunteer phone banks
- Commercial phone banks
- Direct snail mail
- Targeting via social media
- E-mail

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Measurement

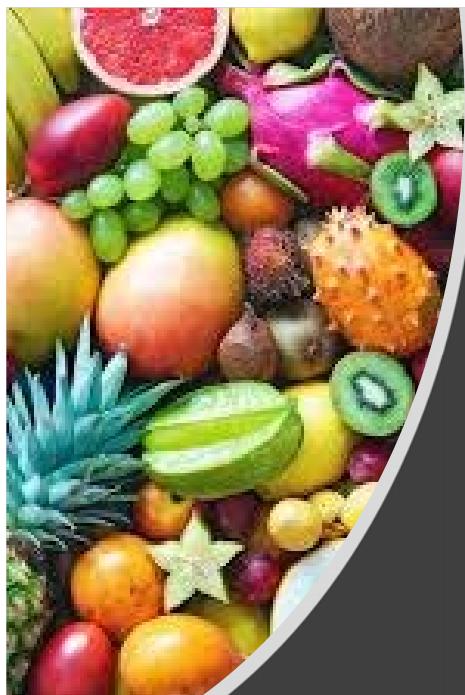
Moving from concepts → variables → indicators.

Levels of measurement vs. units of analysis.

Validity & Reliability:
Improving measurement accuracy and precision.

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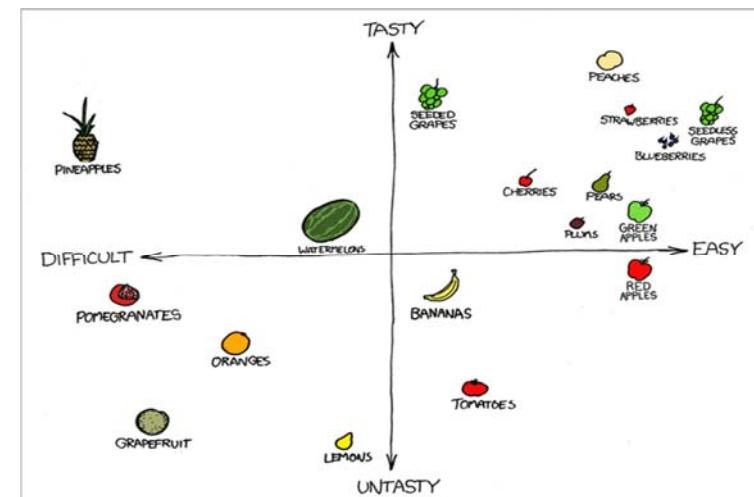
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Think about fruits.
With which variables could you classify each fruit to compare them in some manner?

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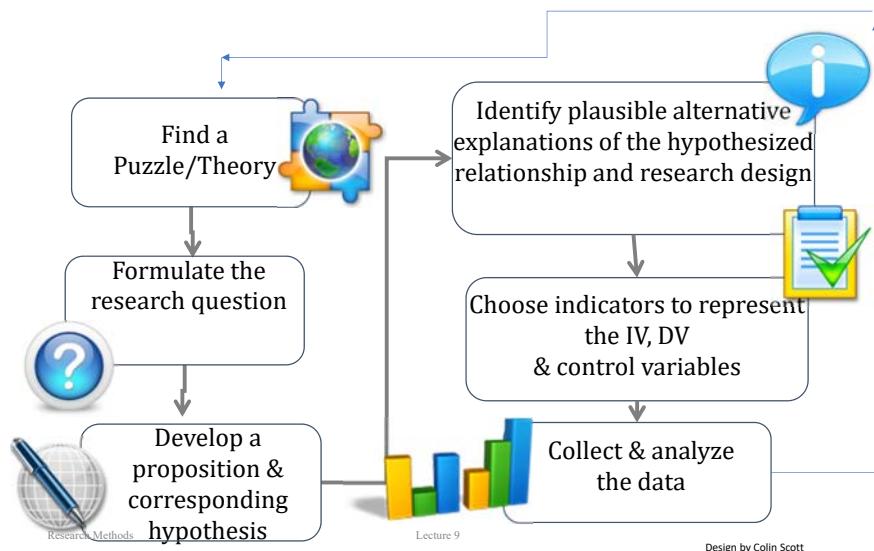
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Examples of Measurements for Fruits



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The research process



What are some units of analysis you can think of?



Unit of Analysis

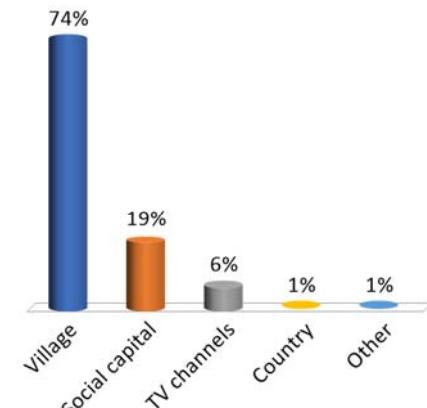
The unit of analysis in a hypothesis specifies what type of actor the hypothesis applies to e.g. individuals, countries, etc.

Example 1: "Countries with IMF loans are more likely to experience political instability than countries without IMF loans." The unit of analysis is?

Generally you should collect data on the unit of analysis in your hypothesis

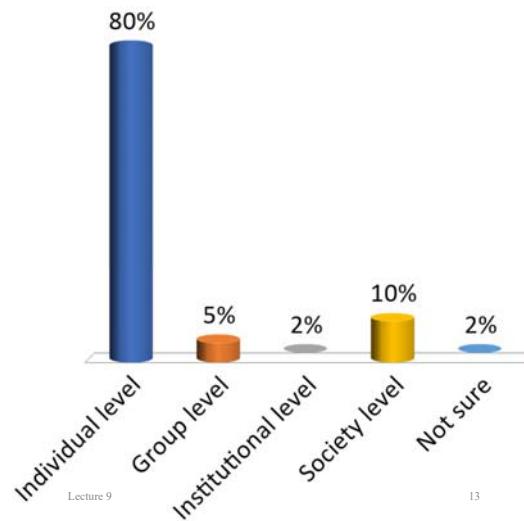
Example # 2: The results showed that the more TV channels an Indian village receives, the less social capital you find in the village. What is the unit of analysis?

1. Village
2. Social capital
3. TV channels
4. Country
5. Other



Survey data such as the Canadian Election Study is collected at which unit of analysis?

1. Individual level
2. Group level
3. Institutional level
4. Society level
5. Not sure



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Cross-Level Inference:
Attempting to make inferences
about one unit of analysis with
data from another unit of
analysis

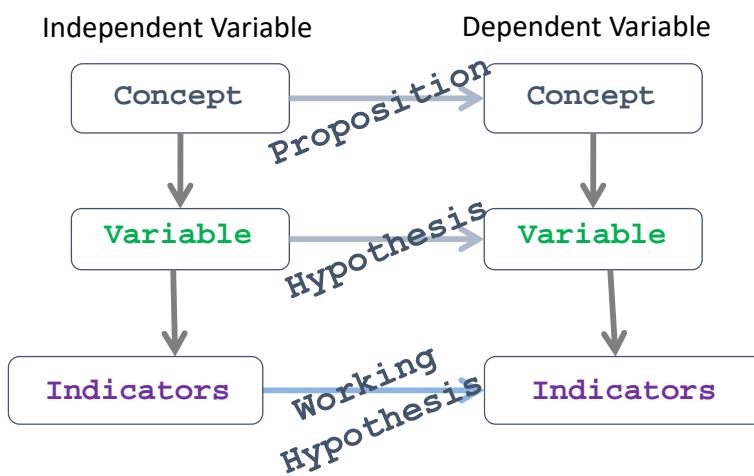
The Problem of Cross-Level Inference

Example: ecological fallacy -
making a mistaken conclusion
about individual-level behavior
based on group-level data.

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Making propositions testable



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How to get
from concept
to indicator

Step
1

Define our Concepts

Step
2

Operational Definitions of our Variables

- Very specific.
- Disagreement is possible

Step
3

Find the best Indicator for your Variable

- These are the actual measurements that reflect the operational definition, pay attention to unit of analysis!

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How to get from concepts to indicators?

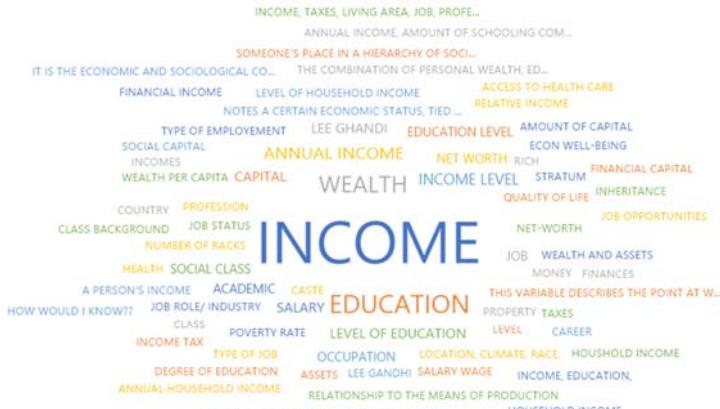
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- Assume your Step 1: **Define your Concepts**
 - Example DV: Political Participation – what do you think it means? Literature!!! E.g. voluntary actions that influence powerful actors and the public
- Step 2: **Operational Definitions of our Variables**
 - What behaviours are reflective of “political participation”? Be specific. Disagreement is possible.
 - How can we operationalize PP? Are there dimensions of pp we must consider? Still literature!!!
 - Perhaps distinguish electoral and non-electoral forms of political participation. Or others?
- Step 3: **Find the best Indicator for your Variable**
 - How specifically do you measure pp, what is your indicator and where do you take it from?
 - Multiple indicators are good
 - Electoral: Survey asks whether R voted or not, and whether they gave to a campaign contribution
 - None-electoral: Survey asks whether R took part in a protest, signed a petition, or acted politically online

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What do you think are some good operational definitions (at variable stage) of socio-economic status?

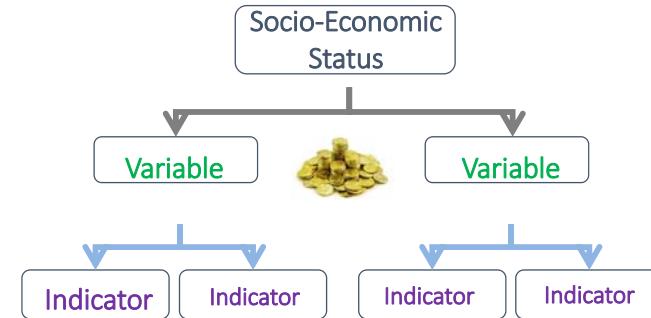


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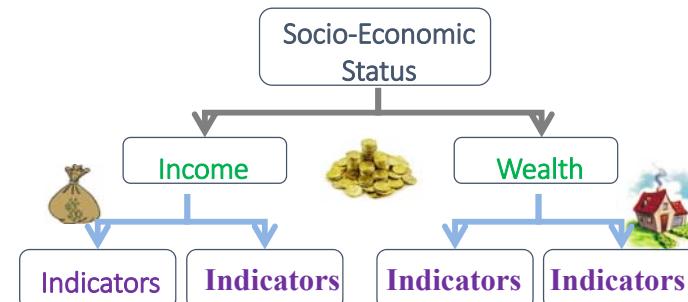
Operationalizing ‘Socio-Economic Status’

Socio-Economic Status: ‘a person’s relative location in a hierarchy of material advantage’.



Operationalizing ‘Socio-Economic Status’

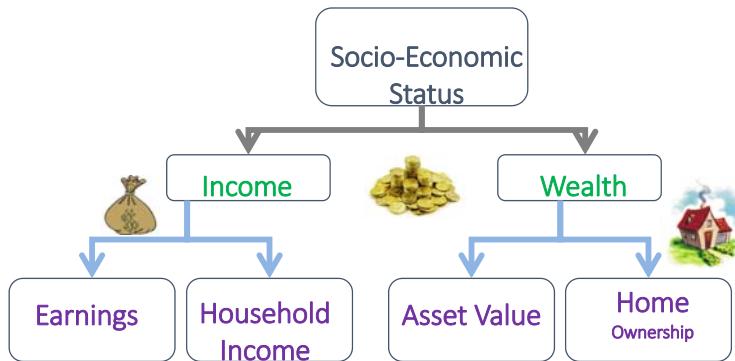
Socio-Economic Status: ‘a person’s relative location in a hierarchy of material advantage’.



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Operationalizing 'Socio-Economic Status'

Socio-Economic Status: 'a person's relative location in a hierarchy of material advantage'.



Countries with IMF loans will experience more political instability and unrest than countries without IMF loans.

- What is meant by "political instability and unrest"?
- Defining the concept: Political instability means riots or mass demonstrations related to national politics.
- Operational definition: e.g. Any event with more than 1000 participants and a publicly stated goal related to national politics.
- Indicators: ??
- Practice!



Any questions about transfer from concept to indicator?

Variables can be measured at different levels

What is the difference?

Is country X a democracy?

How democratic is country X?

Which formulation offers the most information?

Levels of Measurement: How much information do your measures contain?

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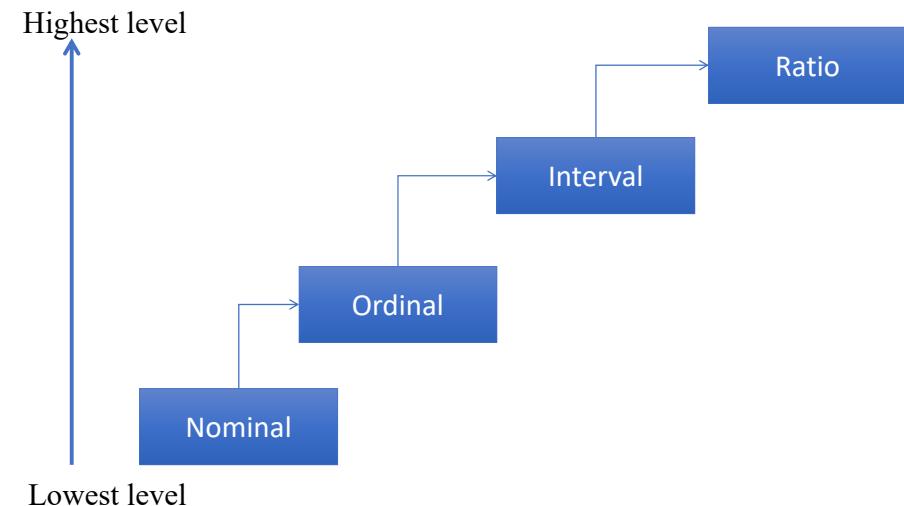
Four levels of measurement

- I. **Nominal** (often just a label, unordered categories)
- II. **Ordinal** (still just a label, but allows for ranking, ordered categories)
- III. **Interval** (numerical values; with meaningful space between numbers, very rare)
- IV. **Ratio** (numerical values with a true 0 point; height, weight, turnout etc. however temperature in kelvin)

For our purposes we'll treat interval and ratio often as the same level of measurement.

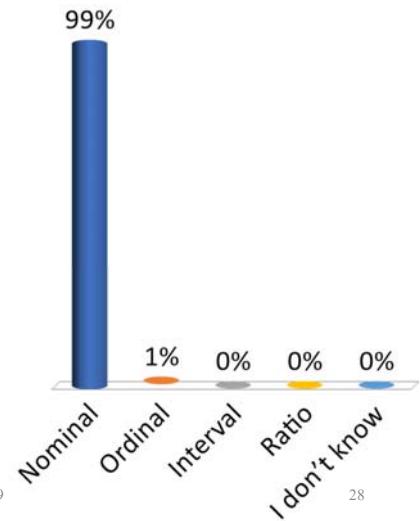
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Levels of measurement



Somebody's religion or religious affiliation is a _____ level variable?

1. Nominal
2. Ordinal
3. Interval
4. Ratio
5. I don't know



Lets practice what we have learned !

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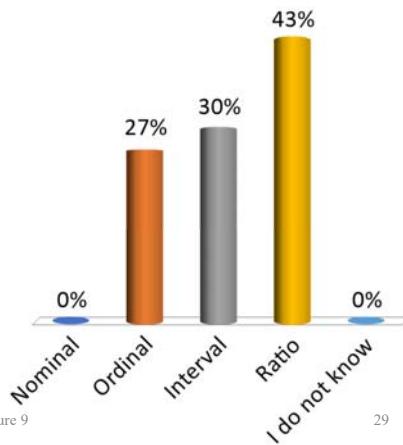
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Religious attendance measured by times spent per month in a church/mosque/temple etc. is a _____ level variable.

1. Nominal
2. Ordinal
3. Interval
4. Ratio
5. I do not know



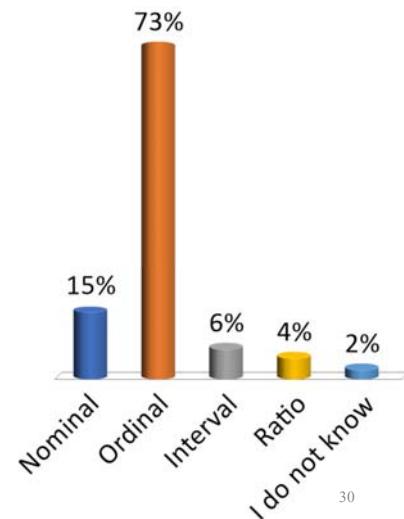
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I like to know the extent to which you agree with the statement: I learn a lot in this class!!!

1. Nominal
2. Ordinal
3. Interval
4. Ratio
5. I do not know



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In sum,
what do
we need
to develop
good
measures?

- A **clear definition** of the concept you want to measure.
- Concepts are too abstract to measure. Make them **concrete** by operationalizing them into variables.
- Select **one or more** indicators that give you information about your variables.
- Good measures adequately assess **all dimensions** of a concept.
- If we were to repeatedly apply a measure to the same observations, we should get **about the same** results.

→ good measures are both **reliable** and **valid**.

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Assignment #3



Research Question



A fully specified testable Hypothesis with DV and IV and the specific relationship you expect, at least two references to academic work in this area



Briefly explain the causal mechanism



Suggest a unit of analysis



Think through the operational definition of your variables and propose two single measurements/indicators per variable and,



Suggest a data set or survey that might be used to test your ideas, discuss its suitability summarize the data set in a paragraph, link the url.

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What to expect in next few weeks

Thursday: case studies and comparative method

Next week: guest lectures

Oct 15 lecture as usual

Oct 17—midterm

- Midterm Study Guide: Part 1: MCQ; Part 2: Short answers
- Resources: study guide, lecture notes, readings, your notes, Study groups, online clinic, TA emails, Prof emails
- Misc: Seating/stuff up front/bring pencil/pen/eraser only MCQ sheet in pencil

Points	Team	Points	Team
5.33	Comparative Politics...		
4.27	Comparative Politics...		
4.23	International Relations		
4.13	Political Theory		
3.98	Other or do not know		
3.41	Canadian Politics		

Team Scores