What Comes Next?

From an Example to Practical Tips

ECS Research Workshop
28 October 2026

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Agenda

1. What Makes a Good Research Paper?
2. Learning Through an Example
3. What to Do Next?

What Makes a Good Research Paper?

A Good Research Question

- Interesting and important
- Clear contribution to the existing literature

Convincing Identification

- Credible identification strategy
- Robust results
- Competing explanations and mechanisms

Meaningful Implications

- Broader insights beyond the specific setting
- Implications for policy, theory, or practice

Example:
Healthcare in Africa

Can historical experiences shape present-day health behavior?



Lowes & Montero (2021, AER)

Motivation

Anthropology & History Literature

Historical accounts of coercive medical campaigns and mistrust



An Interesting Puzzle

Could mistrust of modern medicine persist across generations?



A Testable Research Question

Did exposure to colonial medical campaigns affect present-day medical trust and vaccination?

Theory / Observation-Driven vs. Data-Driven

Theory / Observation-Driven

Start with a theory or interesting observation



Develop a testable hypothesis



Find data to test the hypothesis

Data-Driven

Start with available data



Identify credible causal effects



Develop theories to explain the findings

Theory / Observation-Driven vs. Data-Driven

Theory / Observation-Driven

Start with a theory or interesting observation



Develop a testable hypothesis



Find data to test the hypothesis

Data-Driven

Start with available data



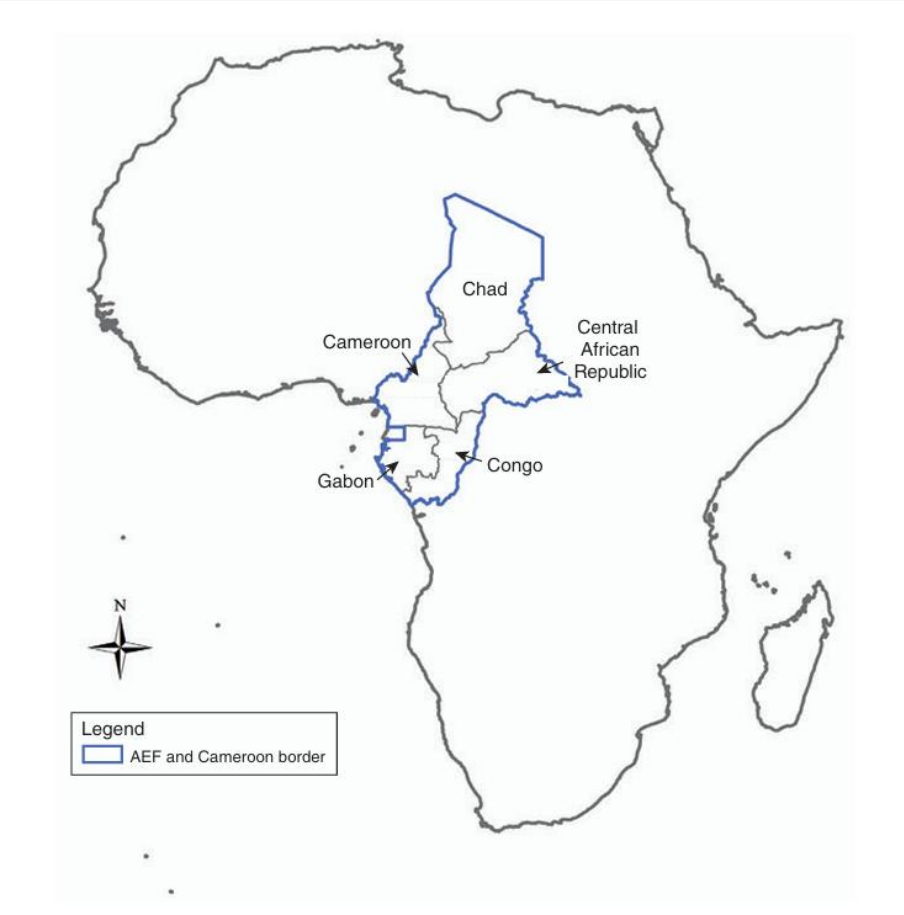
Identify credible causal effects



Develop theories to explain the findings

Historical Setting

- **French colonial** governments organized large-scale medical campaigns in **Cameroon and French Equatorial Africa.**
- The campaigns aimed to combat tropical diseases, particularly sleeping sickness, transmitted by the tsetse fly.
- Mobile medical teams conducted compulsory examinations and injections, sometimes involving treatments with **severe side effects**, including blindness and death.



Source: Lowes & Montero (2021, AER)

The injection against sleeping sickness was too painful

The injection against sleeping sickness was too painful

They gave me an injection in the head

They gave me an injection in the neck

They gave me an injection in the back

...

They ask me to go draw water from the well

If I drag my feet

The policemen hit me on the head

The injection against sleeping sickness was too painful

(see Lachenal 2014)



Source: French Ministry of Colonies / ECPAD, Cameroon, 1926.

Research Question & Contribution

Research Question

Do historical colonial medical campaigns have persistent effects on present-day trust in modern medicine and healthcare behavior?

What is the paper studying?

- **Historical exposure:** Coercive colonial medical campaigns (1921–1956)
- **Present-day outcomes:** Child vaccination and willingness to take blood tests

Why is this question important?

- **Academic contribution**: New empirical evidence on the long-run effects of historical experiences on medical mistrust
- **Policy relevance**: Historical mistrust may undermine the effectiveness of modern healthcare interventions

From Concepts to Measurement

How do we measure something we cannot directly observe?

CONCEPT		MEASUREMENT
Historical Exposure	→	Share of years visited (Colonial archives)
Medical Mistrust	→	Refusal of a free blood test (DHS: Anemia / HIV)
Vaccination Behavior	→	Share of 9 vaccinations completed (DHS: Children under five)

Why use blood-test refusal as a proxy for medical mistrust?

- ✓ No direct measures of medical trust in the DHS.
- ✓ An observed decision to accept or refuse a free medical test.
- ✓ Refusal could also reflect discomfort or fear of test results.

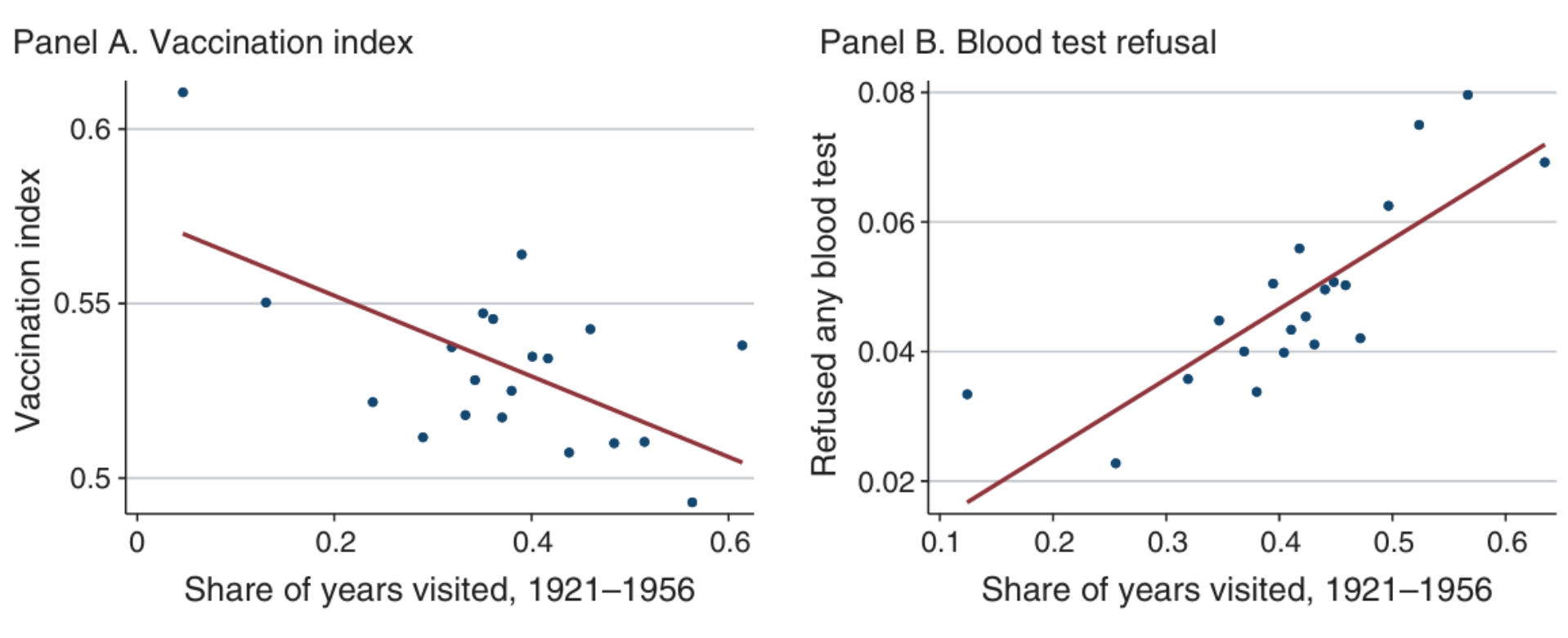
Data

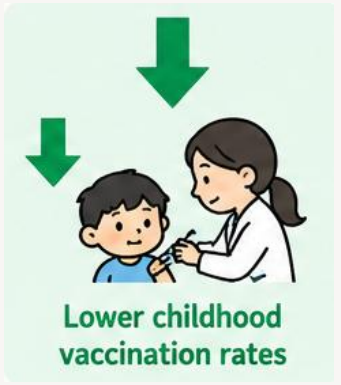
Data Source	What It Measures	Role
French Colonial Archives (1921–1956)	Historical medical campaign visits	Treatment
DHS	Childhood vaccination and blood-test refusal	Main outcomes
Soil Suitability Data	Cassava vs. millet suitability	Instrument
Afrobarometer	Healthcare access and nonmedical trust	Additional evidence
AidData / World Bank	Project success ratings	Policy implications

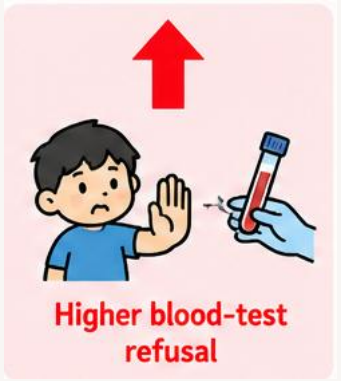
Identification: Correlation vs. Causation

Historical exposure (1921–1956) → Childhood vaccination (1994–2014)

Areas with greater historical exposure to colonial medical campaigns have:







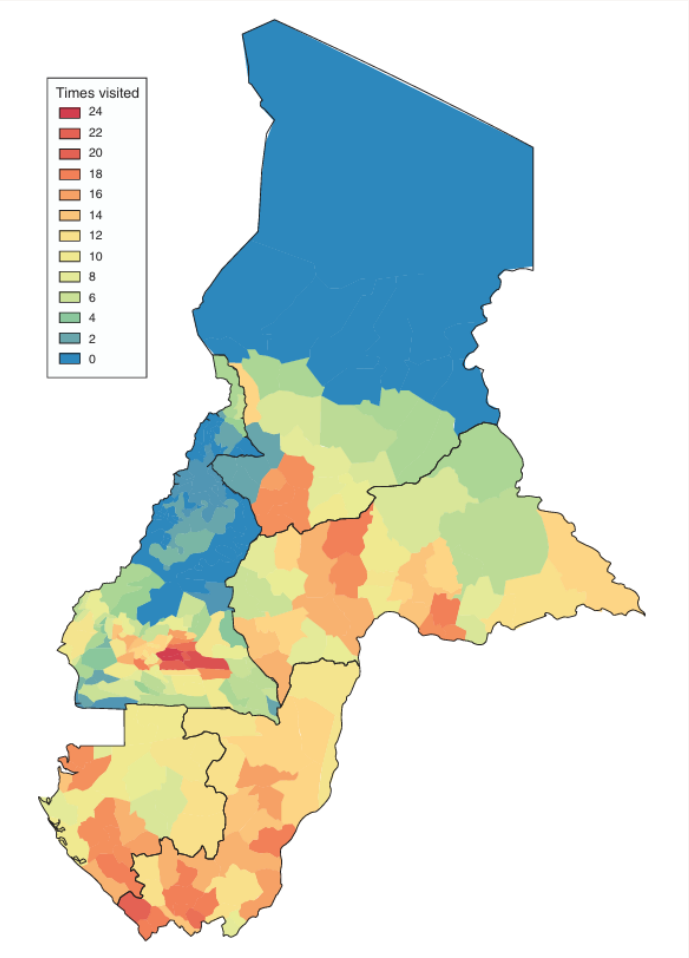
Source: Lowes & Montero (2021, AER)

Identification: Correlation vs. Causation

But can we interpret this relationship as causal?

- Campaigns were not randomly assigned across locations.
- Areas with different campaign exposure may differ in disease prevalence, geography, or historical institutions.
- These factors may independently influence present-day healthcare behavior.

We need a source of variation in historical campaign exposure that is not driven by these confounding factors.



Source: Lowes & Montero (2021, AER)

What Is an Identification Strategy?

How can we establish that X causes Y, rather than simply being correlated with Y?

1. What is the identification challenge?

What other factors could explain the observed relationship?

2. Where does the identifying variation come from?

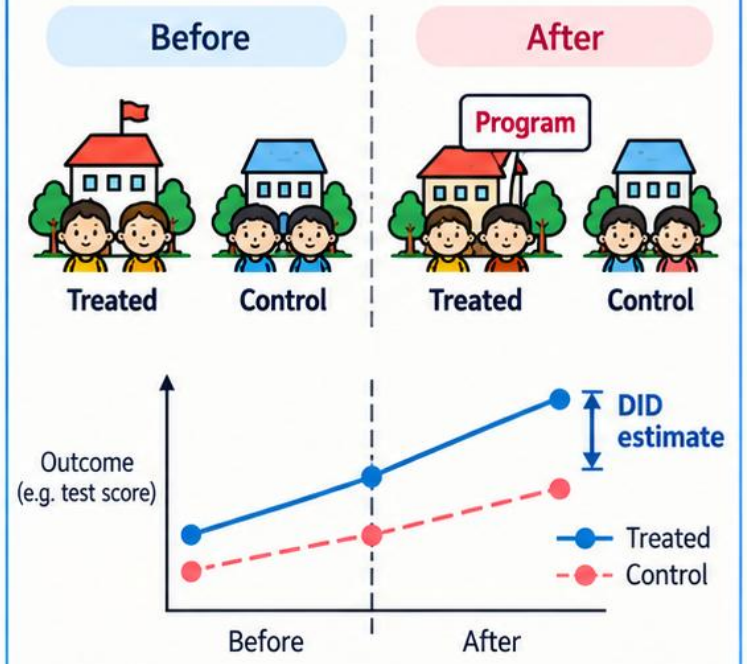
What allows us to isolate the effect of X on Y?

3. Why is this variation credible?

What assumptions are required, and how can we assess them?

Examples for Identification Strategy

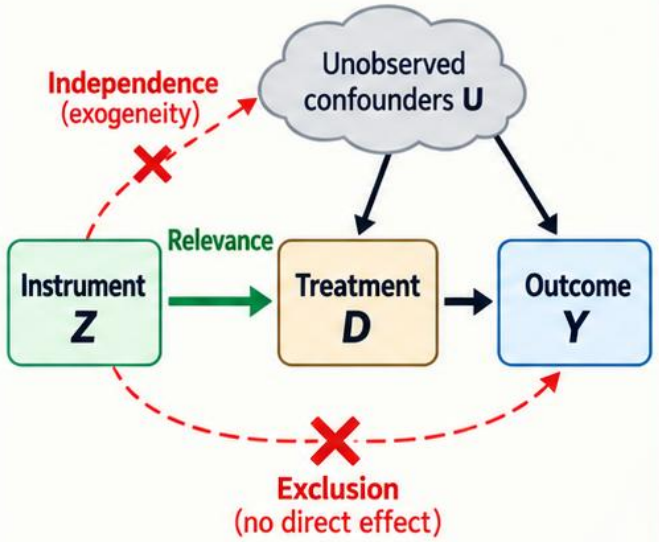
1. Difference-in-Differences (DID)



$$ATT = (Y_T^{post} - Y_T^{pre}) - (Y_C^{post} - Y_C^{pre})$$

effect on the treated

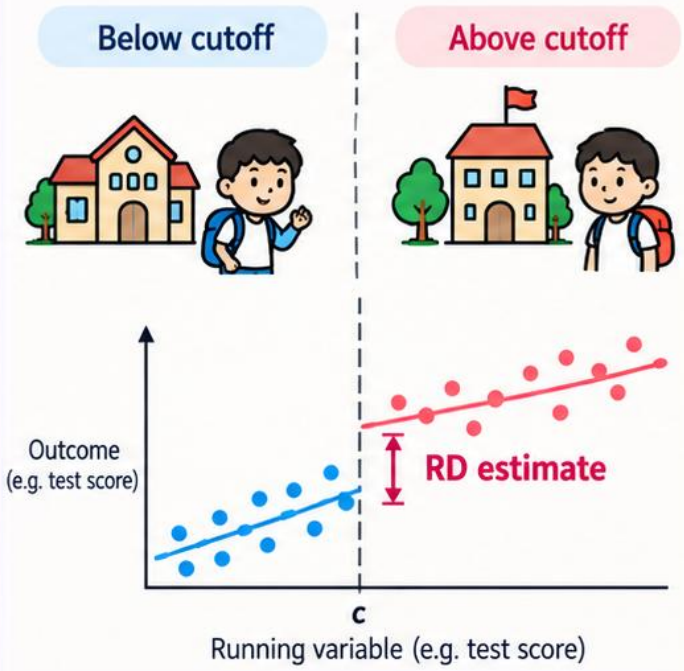
2. Instrumental Variable (IV)



$$LATE = \frac{\text{Effect of Z on Y}}{\text{Effect of Z on D}} = \frac{\beta_{ZY}}{\beta_{ZD}}$$

local effect

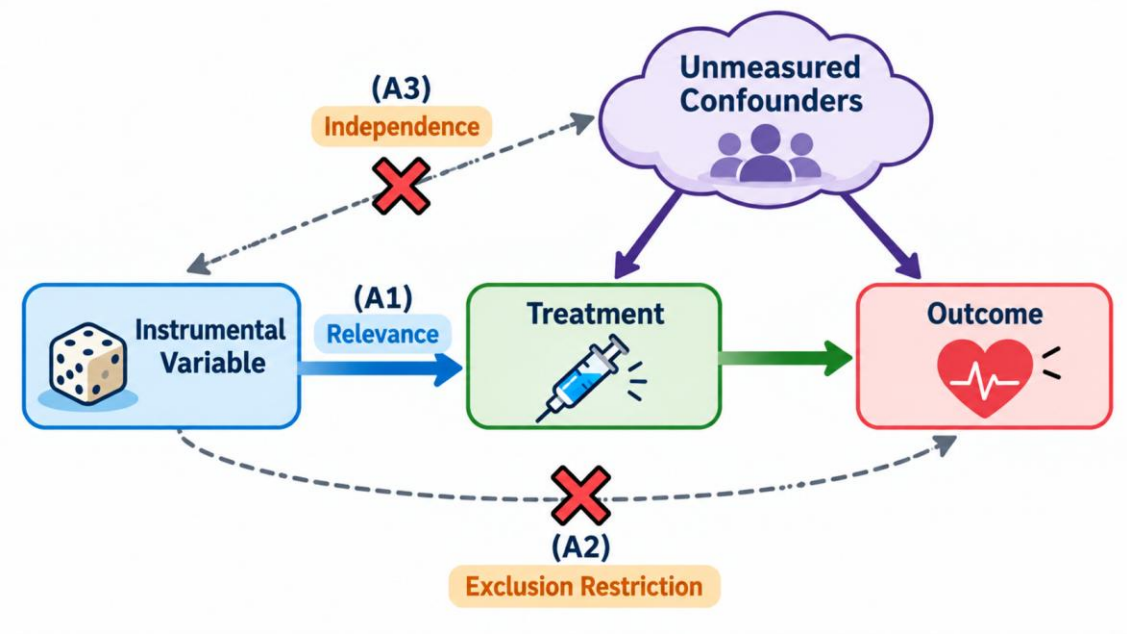
3. Regression Discontinuity (RD)



$$\tau_{RD} = \lim_{x \to c^+} E[Y \mid X = x] - \lim_{x \to c^-} E[Y \mid X = x]$$

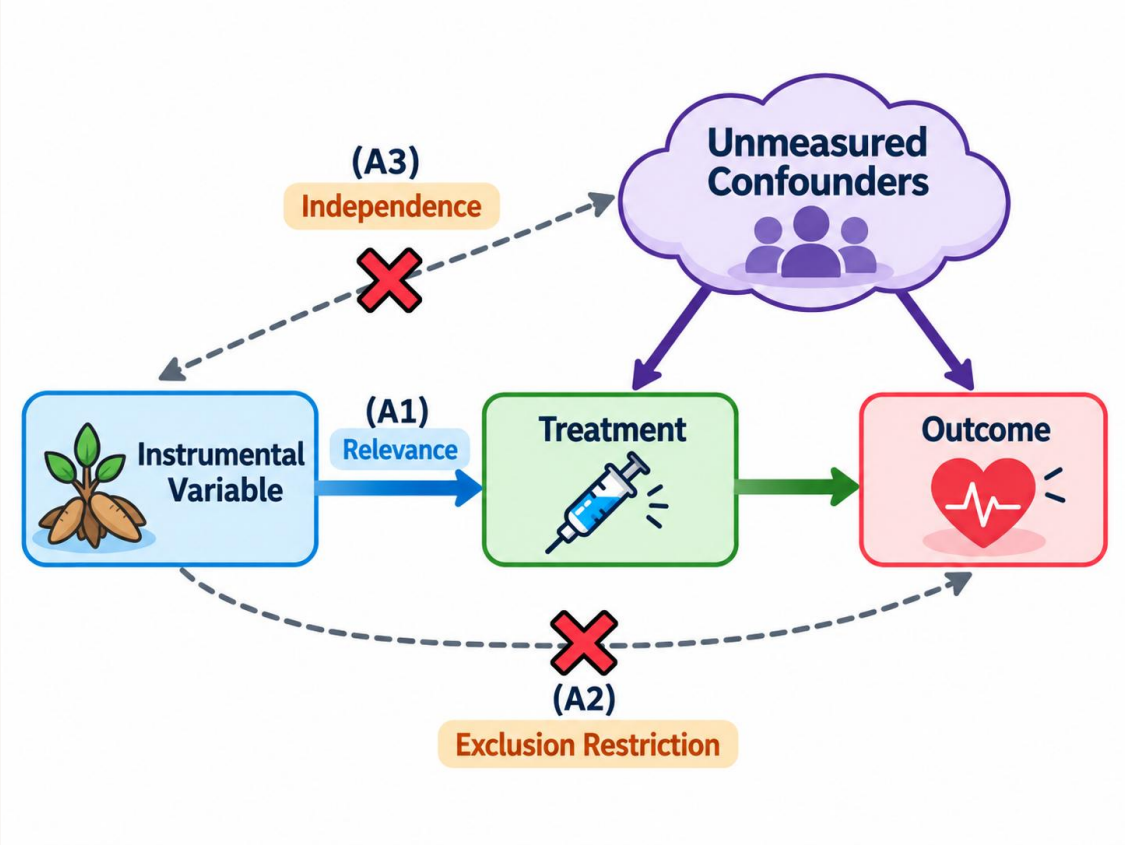
local treatment effect

Identification Strategy: Instrumental Variable



Assumption	Meaning
A1. Relevance	The instrument must affect the treatment.
A2. Exclusion Restriction	The instrument affects the outcome only through the treatment.
A3. Independence	The instrument must be independent of unobserved confounders.

Identification Strategy: Instrumental Variable



Higher relative suitability for cassava

Geographic variation in agricultural potential

Greater potential exposure to tsetse fly habitats

Cassava processing near water; less land clearing

More colonial medical campaign visits

Present-day medical trust and vaccination

Main Results

OLS Estimates

	Vaccination index			Blood test refused		
	(1)	(2)	(3)	(4)	(5)	(6)
Share of years visited, 1921–1956	−0.0928 (0.0473)	−0.116 (0.0442)	−0.116 (0.0435)	0.128 (0.0351)	0.108 (0.0284)	0.115 (0.0293)
Geography and climate controls	Yes	Yes	Yes	Yes	Yes	Yes
Disease suitability controls	Yes	Yes	Yes	Yes	Yes	Yes
Colonial controls	Yes	Yes	Yes	Yes	Yes	Yes
Contemporary controls	No	Yes	Yes	No	Yes	Yes
Lasso-selected controls	No	No	Yes	No	No	Yes
Observations	50,773	50,668	50,668	71,052	71,001	71,001
Clusters	207	207	207	160	160	160
Mean dependent variable	0.532	0.532	0.532	0.048	0.048	0.048

IV estimates are larger in magnitude than OLS estimates! Why?

Medical teams may have avoided communities that were initially less trusting or more resistant.

IV Estimates

	Share of years visited					
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A. First-stage estimates						
Relative suitability: cassava versus millet	0.0611 (0.0182)	0.0600 (0.0178)	0.0383 (0.0158)	0.0853 (0.0196)	0.0835 (0.0189)	0.0472 (0.0165)
Geography and climate controls	Yes	Yes	Yes	Yes	Yes	Yes
Disease suitability controls	Yes	Yes	Yes	Yes	Yes	Yes
Colonial controls	Yes	Yes	Yes	Yes	Yes	Yes
Contemporary controls	No	Yes	Yes	No	Yes	Yes
Lasso-selected controls	No	No	Yes	No	No	Yes
Observations	50,773	50,668	50,668	71,052	71,001	71,001
Clusters	207	207	207	160	160	160
Mean dependent variable	0.372	0.372	0.372	0.416	0.416	0.416
F-statistic of excluded instrument	11.26	11.38	—	18.89	19.45	—
	Vaccination index			Blood test refused		
	(1)	(2)	(3)	(4)	(5)	(6)
Panel B. Second-stage 2SLS estimates						
Share of years visited, 1921–1956	−0.0820 (0.149)	−0.251 (0.148)	−0.297 (0.167)	0.201 (0.068)	0.164 (0.059)	0.271 (0.064)
Geography and climate controls	Yes	Yes	Yes	Yes	Yes	Yes
Disease suitability controls	Yes	Yes	Yes	Yes	Yes	Yes
Colonial controls	Yes	Yes	Yes	Yes	Yes	Yes
Contemporary controls	No	Yes	Yes	No	Yes	Yes
Lasso-selected controls	No	No	Yes	No	No	Yes
Observations	50,773	50,668	50,668	71,052	71,001	71,001
Clusters	207	207	207	160	160	160
Mean dependent variable	0.532	0.532	0.532	0.048	0.048	0.048

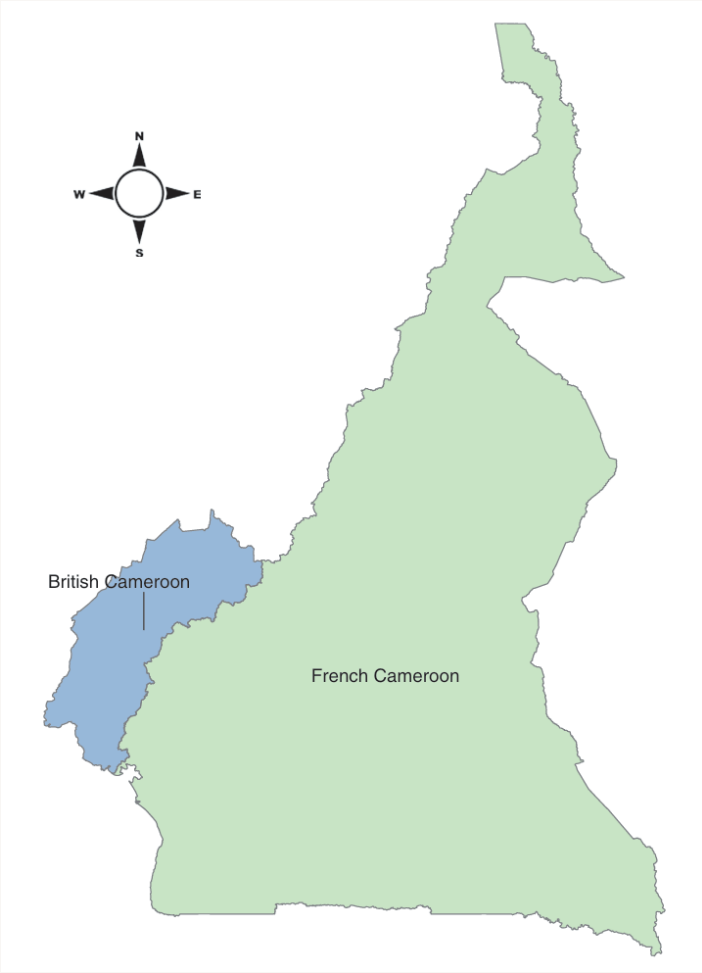
Source: Lowes & Montero (2021, AER)

Falsification Exercise: A Placebo Test for the IV

Does the instrument predict healthcare behavior where colonial medical campaigns were absent?

Former British Cameroon	Former French Cameroon
No equivalent medical campaigns	Colonial medical campaigns
🌱 → 💗	🌱 → 🏥 → 💗
No significant relationship	**Significant relationship**
✓	✓

Finding: The instrument predicts present-day healthcare behavior only in areas with historical medical campaigns.



Source: Lowes & Montero (2021, AER)

Robustness Checks

Do the Results Hold Under Alternative Specifications?

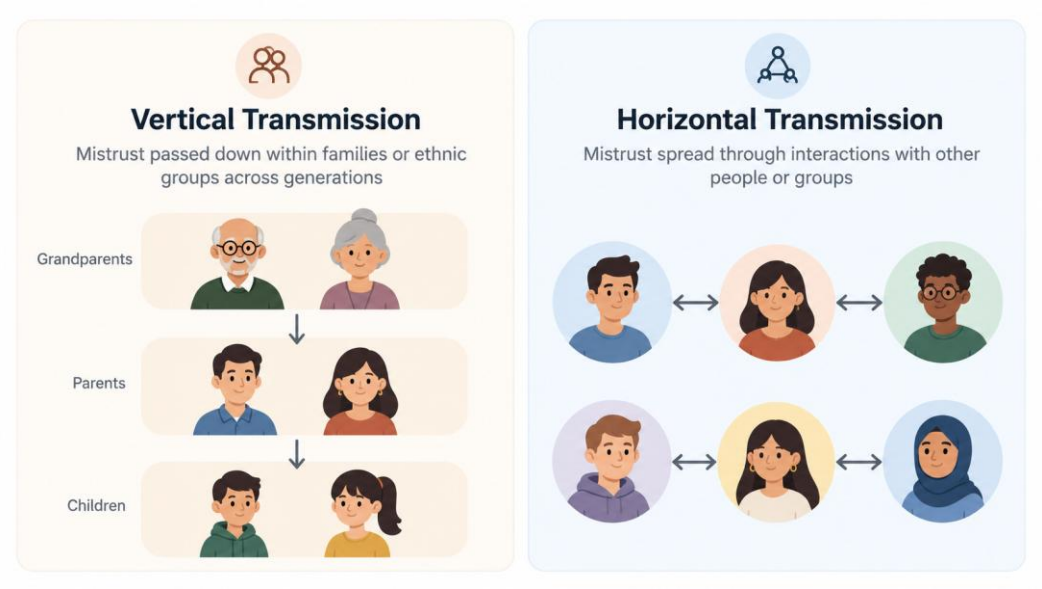
Check	What changes?
Alternative controls	Pre-colonial characteristics and disease prevalence
Alternative samples	Including Northern Chad
Alternative measures	WHO vaccination data; anemia vs. HIV refusal
Alternative instruments	Cassava specificity relative to other crops

Main takeaway: The findings are broadly robust to alternative specifications, although statistical precision varies across IV models.

Mechanisms

How Does Mistrust Persist?

How can historical experiences affect healthcare behavior generations later?



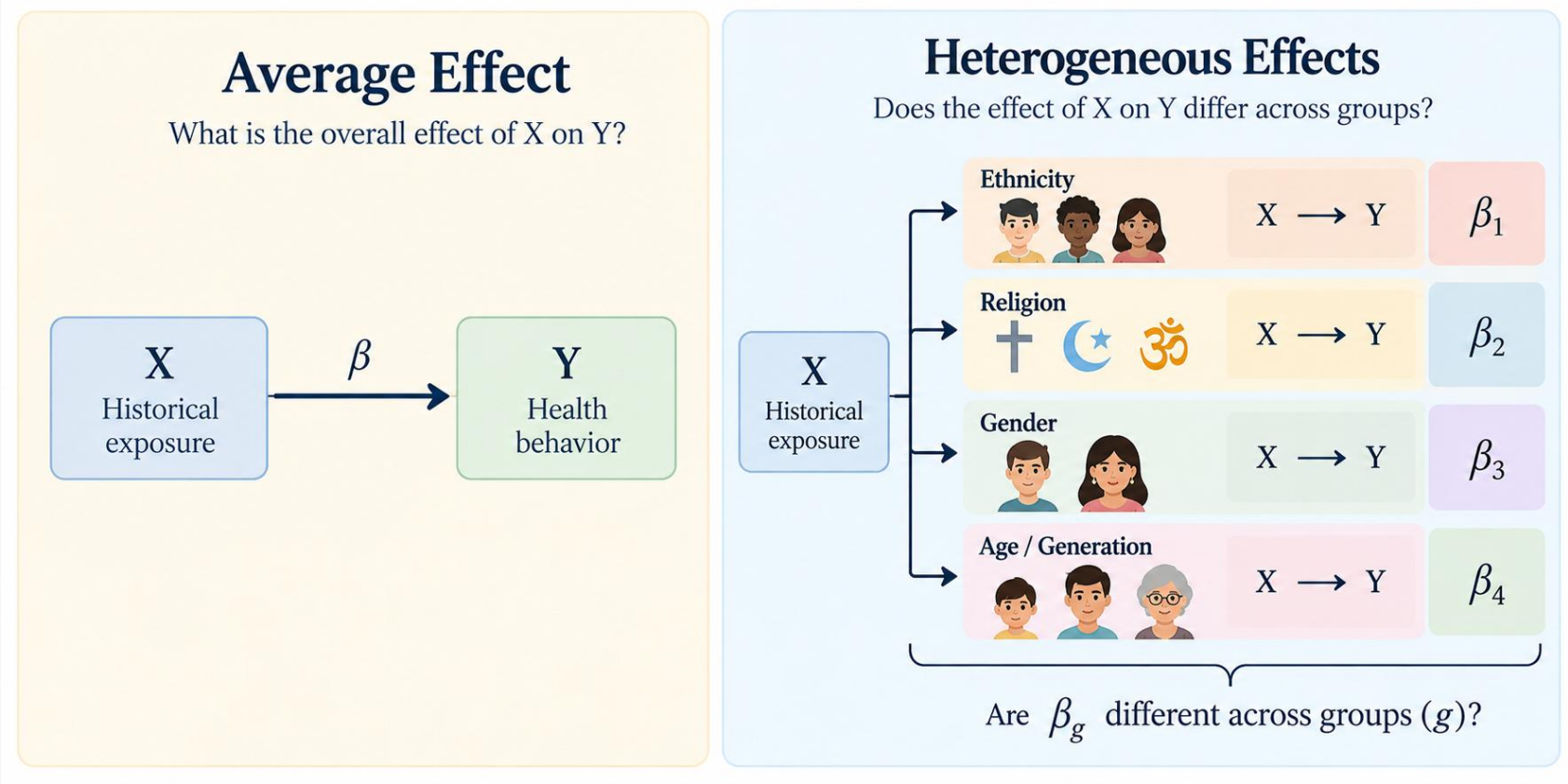
	Blood test refused				
	(1)	(2)	(3)	(4)	(5)
Ethnicity-based measure of share of years visited, 1921–1956	0.0879	0.0864	0.0908	0.0740	0.0960
	(0.0354)	(0.0366)	(0.0365)	(0.0321)	(0.0346)
	[0.130]	[0.156]	[0.146]	[0.116]	[0.094]
Average share of years visited, 1921–1956 among other ethnicities in same location	—	0.0295	0.0473	0.0326	0.0638
		(0.0399)	(0.0434)	(0.0413)	(0.0342)
		[0.406]	[0.240]	[0.374]	[0.072]
Geography and climate controls	Yes	Yes	Yes	Yes	Yes
Disease suitability controls	No	No	Yes	Yes	Yes
Colonial controls	No	No	No	Yes	Yes
Contemporary controls	No	No	No	Yes	Yes
Lasso-selected controls	No	No	No	No	Yes
Observations	8,239	7,189	7,189	7,189	7,189
Clusters	25	25	25	25	25
Mean dependent variable	0.113	0.119	0.119	0.119	0.119

Findings: Own ethnic-group exposure predicts present-day blood-test refusal, but the evidence does not clearly distinguish vertical from horizontal transmission.

Source: Lowes & Montero (2021, AER)

Heterogeneous Effects

For Whom Does the Effect Matter More?



Ask:

- Does the effect differ across different groups?
- Are the differences statistically meaningful?

Using Heterogeneity to Understand Mechanisms

EXAMPLE: Laura Munoz Blanco (2026)

Main Finding

Earthquake-induced migration is associated with earlier marriage among young women.

Why is the effect stronger for some women?

Explore differences in economic incentives across groups



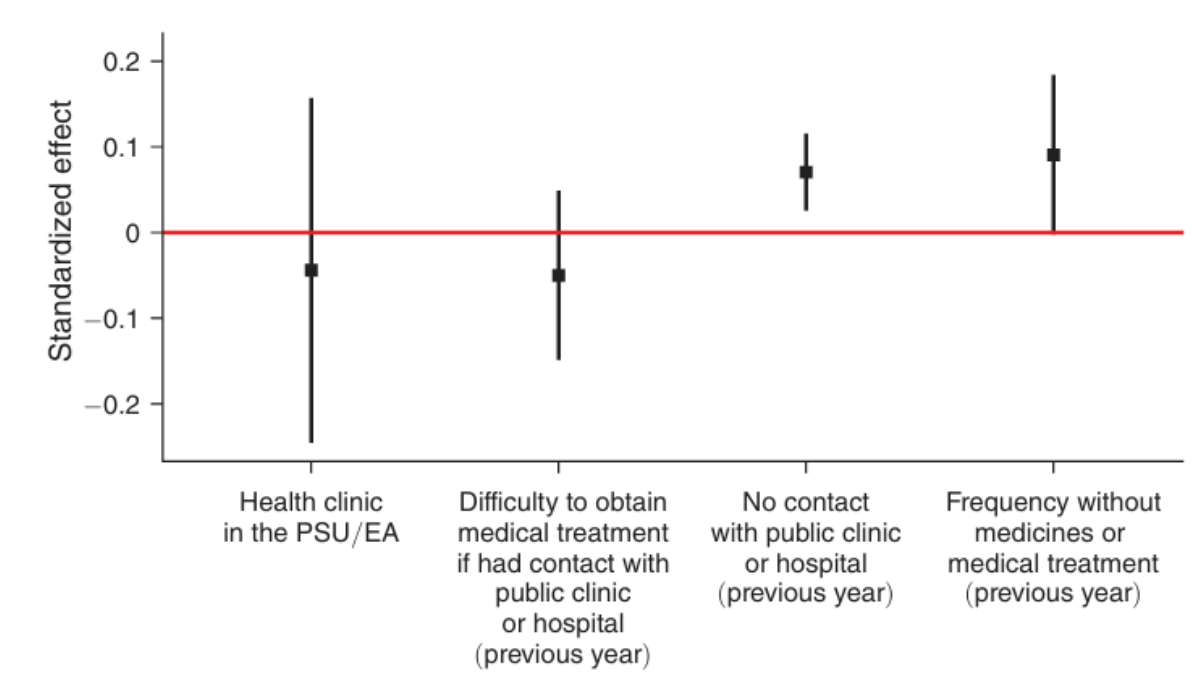
Differences in group characteristics can help reveal the economic mechanisms behind heterogeneous effects.

Competing Explanations

Could It Be Something Else?

1. Poor Healthcare Access?

Perhaps people receive fewer vaccinations because healthcare services are harder to access.



Source: Lowes & Montero (2021, AER)

Findings

- No significant difference in reported healthcare access
- More no contact with healthcare providers and more unmet medical needs

Competing Explanations

Could It Be Something Else?

2. Generalized Distrust

Historical exposure to coercive colonial medical campaigns may have generated a broader distrust of people and institutions, rather than mistrust specifically toward modern medicine.

	Trust questions–AES coefficients			
	Round 5		Round 6	
	(1)	(2)	(3)	(4)
Share of years visited, 1921–1956	−0.0101	−0.0063	0.0029	0.0029
	(0.0094)	(0.0094)	(0.0058)	(0.0058)
Geography and climate controls	Yes	Yes	Yes	Yes
Disease suitability controls	Yes	Yes	Yes	Yes
Colonial controls	Yes	Yes	Yes	Yes
Contemporary controls	No	Yes	No	Yes
Observations	762	762	1,782	1,782
Clusters	38	38	64	64

Findings

- Less support for generalized distrust as the main channel

Source: Lowes & Montero (2021, AER)

Policy Implementation

Does History Matter for Project Success?

Are modern healthcare projects less successful in areas with greater exposure to colonial medical campaigns?

	World Bank project rating Pooled regression with all projects				
	(1)	(2)	(3)	(4)	(5)
Health project × share of years visited, 1921–1956	−2.090 (0.662)	−2.103 (0.666)	−2.098 (0.670)	−2.100 (0.668)	−1.979 (0.640)
Geography and climate controls	Yes	Yes	Yes	Yes	Yes
Disease suitability controls	No	Yes	Yes	Yes	Yes
Colonial controls	No	No	Yes	Yes	Yes
Contemporary controls	No	No	No	Yes	Yes
Lasso-selected controls	No	No	No	No	Yes
Observations	215	215	215	215	215
Clusters	72	72	72	72	72
Mean dependent variable	3.66	3.66	3.66	3.66	3.66

Findings

Greater historical exposure is associated with lower success ratings for health projects relative to non-health projects.

Source: Lowes & Montero (2021, AER)

Summary

MAIN FINDING

Historical exposure and present-day health behavior

X: Colonial medical campaigns (1921–1956) → **Y:** Less childhood vaccination / More blood-test refusal

MEASUREMENT

How do we measure the key concepts?

Historical exposure (X)
Share of years visited Colonial archives

- **Vaccination (Y1)**
  Vaccination index
  DHS
- **Medical mistrust (proxy) (Y2)**
  Blood-test refusal
  DHS

1 IDENTIFICATION

Is the X → Y relationship causal?

Cassava vs. millet suitability (IV) → **Colonial campaign exposure (X)** → **Health behavior (Y)**

✗ No direct path to Y (assumption)

2 ROBUSTNESS & FALSIFICATION

Do our findings hold under alternative measurements, specifications, and samples?

X Colonial campaign exposure → **Y** Health behavior

Examples:

- Alternative controls, samples, and outcomes
- British Cameroon placebo (falsification for IV)

3 MECHANISMS

How might the effect persist?

Colonial campaigns (X) → **Medical mistrust (M)** → **Lower health uptake (Y)**

Potential intergenerational transmission (suggestive evidence)

4 COMPETING EXPLANATIONS

Could other mechanisms explain our findings?

Poor healthcare access? ?
Generalized distrust? ?
→ **Lower health uptake (Y)**

Test alternative stories

5 IMPLICATIONS

Why do our findings matter beyond the specific setting?

More colonial exposure → Lower World Bank HEALTH-project ratings

Not observed for non-health projects

How Can You Take Your Research Further?

Take another look at your **Research Design Canvas.**

1. Sharpen Your Contribution

- What does your project add to the existing literature? Why is your question worth answering?

2. Refine Your Measurement

- Do your variables accurately capture the concepts you want to study?

3. Strengthen Your Research Design

- Can you make a more convincing causal argument? What additional evidence would help?

4. Go Beyond Your Main Findings

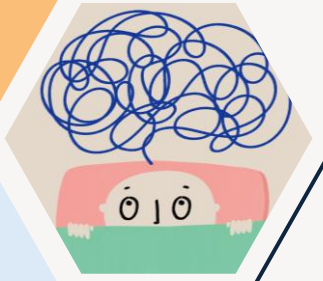
- Explore robustness, potential mechanisms, heterogeneity effects, and competing explanations.

5. Think About the Bigger Picture

- What are the broader (policy) implications?







Thank you

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