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# **Does Culture Matter for National Innovation Rates?**

presented by:  
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# Q1: Does national culture\* matter for innovation rates?

**Initial Bias: No!**

**Why?** Culture is a spectrum from which a very wide range of values can be drawn to fit almost any situation/goal.

**Examples:**

- \* Japan has plenty of individualist actions and values
- \* US has plenty of collectivist actions and values
- \* Almost every culture has been at S&T frontier at some point in human history

**Science: what does the data say?**

**Surprise Finding: Yes!**

\*culture =a country's "central tendencies" in terms of values, beliefs, and preferences (Hofstede 1991)

## Examples of National Cultural Values

- Individualism
- Collectivism (institutional)
- Collectivism (in-group)
- Social autonomy
- Intellectual autonomy
- Hierarchy
- Egalitarianism
- Uncertainty avoidance
- Long-term orientation
- Performance orientation
- Humane orientation
- Assertiveness

# Measurement of National Cultural Values

1) Geert Hofstede (Groningen University, INSEAD, Tilburg University):

- \*117,000 surveys
- \*80,000 questionnaires
- \*72 countries
- \*1967, 1971, 1976, 1980, and 1992
- \*generated 5 cultural values

2) Shalom Schwartz (Hebrew University):

- \*two survey instruments
- \*75,000 schoolteachers (k-12) and college students
- \*67 nations
- \*1988-2000
- \*also: European Social Survey 2002-2003 (20 countries)
- \*generated 7 cultural value orientations

3) Robert House et. al. (GLOBE, New Mexico State)

- \* 735 questionnaire items
- \*17,000 managers from 951 organizations
- \*62 countries
- \*1993-2003
- \*generated 9 cultural values

Also: Fons Trompenaars & Charles Hampden-Turner (7 cultural values), Ronald Inglehart

# Surprise Findings: Culture Matters

- 1) Cultural value “individualism” strongly correlates with national innovation rates.
  - Regardless of measures used and even if we control for economic and policy variables:

-level of development	-military spending
-trade openness	-fuel exports
-education spending	-R&D spending
  - Demand-side individualism may be more important for science and technology than individualism on the supply-side.
- 2) Cultural value of in-group “collectivism” (friends, family, tribe) negatively correlates with national innovation rates.
  - Local collectivism may hurt progress in science worse than technology
- 3) Cultural value of institutional “collectivism” (patriotism) also positively correlates with national innovation rates.
- 4) BUT beware drawing overly strong conclusions from statistics! Need qualitative research for causal mechanisms, unknown causal variables, to confirm stats.

# So What?

- 1) It is popular to stereotype “collectivist” cultures as being anti-innovation. We must avoid this stereotype.**
- 2) Institutions & policies (i.e. different incentive structures) may have a “cultural fit.”**

**Reward systems that foster innovation in one cultural context may fail to do so in another.**

# Why study culture → innovation in the first place?

1) Significant residual of S&T outcomes *not* explained by institutions, policies, or resources

2) Theory: culture may affect innovation via:

- environment of tolerance
- attitudes toward risk
- incentives/rewards for innovative activity
- attitudes towards change

3) Many well-respected scholars believe culture matters for long-run S&T progress:

ECONOMICS: Avner Greif, David Landes, Joel Mokyr, Jeffrey Sachs, Peter Temin, Hal Varian, etc.

BUSINESS/INNOVATION: Ronald Dore, Richard Florida, Michael Porter, etc.

POLITICS/SOCIOLOGY: Francis Fukuyama, Sam Huntington, Bob Putnam, Lucian Pye, etc.

**BUT: most evidence = 1 or 2-country case studies**

# Why rely solely on case studies when...?

## Data on National Culture:

- Hofstede
- House (GLOBE)
- Inglehart
- Schwartz

← INDEPENDENT measures of same phenomena!

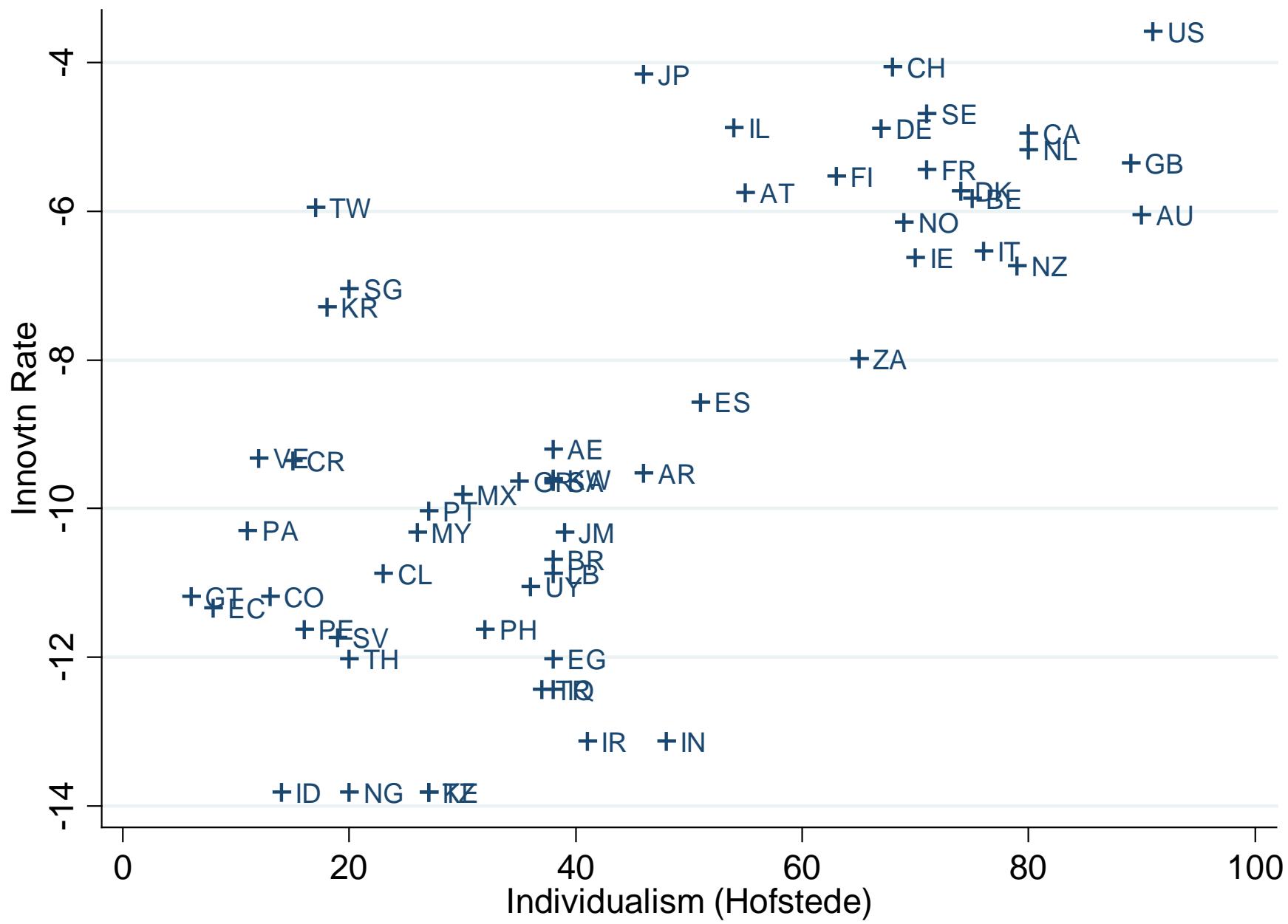
## Data on National Innovation Rates:

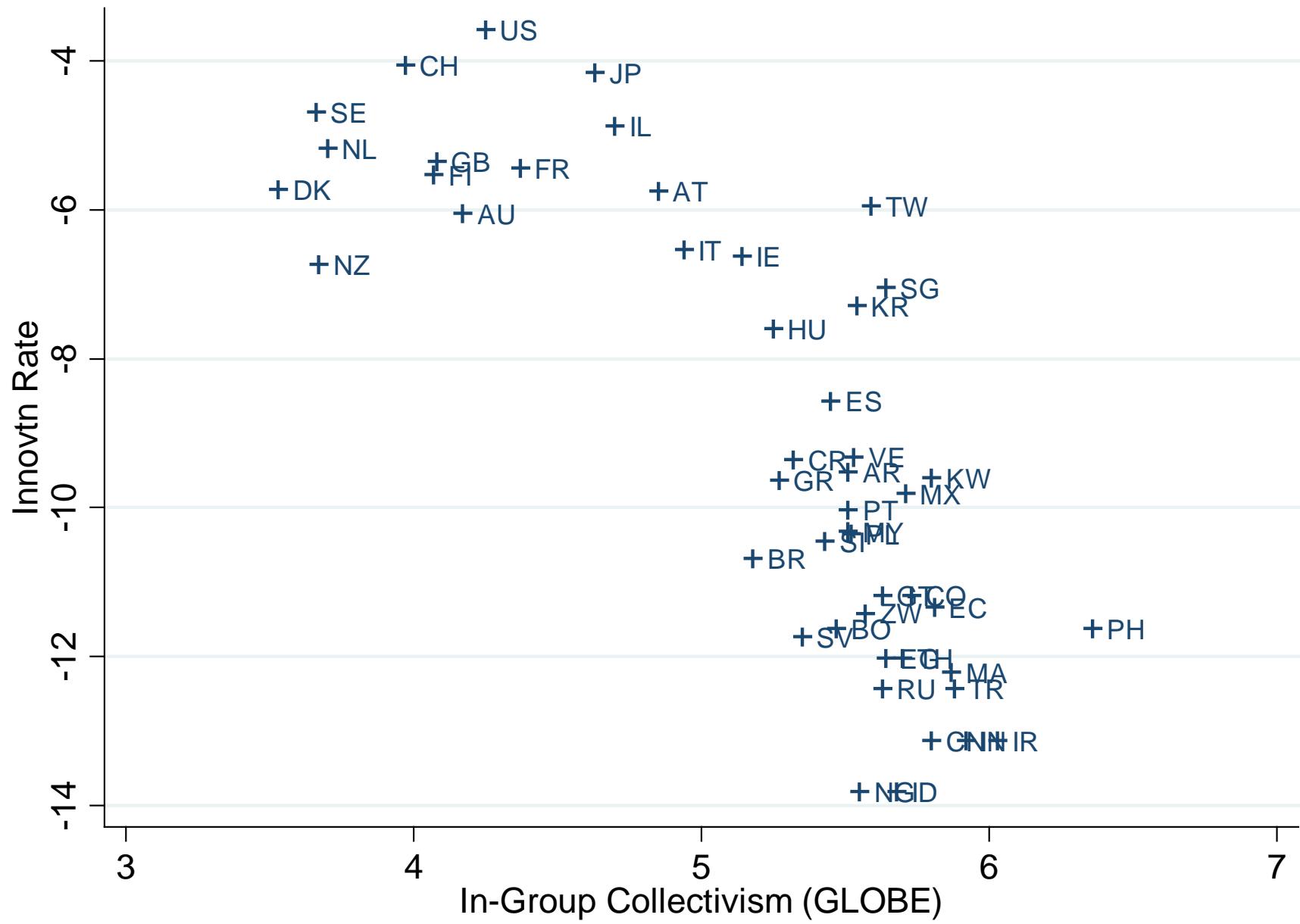
- Per Cap. Patents weighted by forward cites
- Per Cap. STEM pubs weighted by forward cites
- Survey-based indices

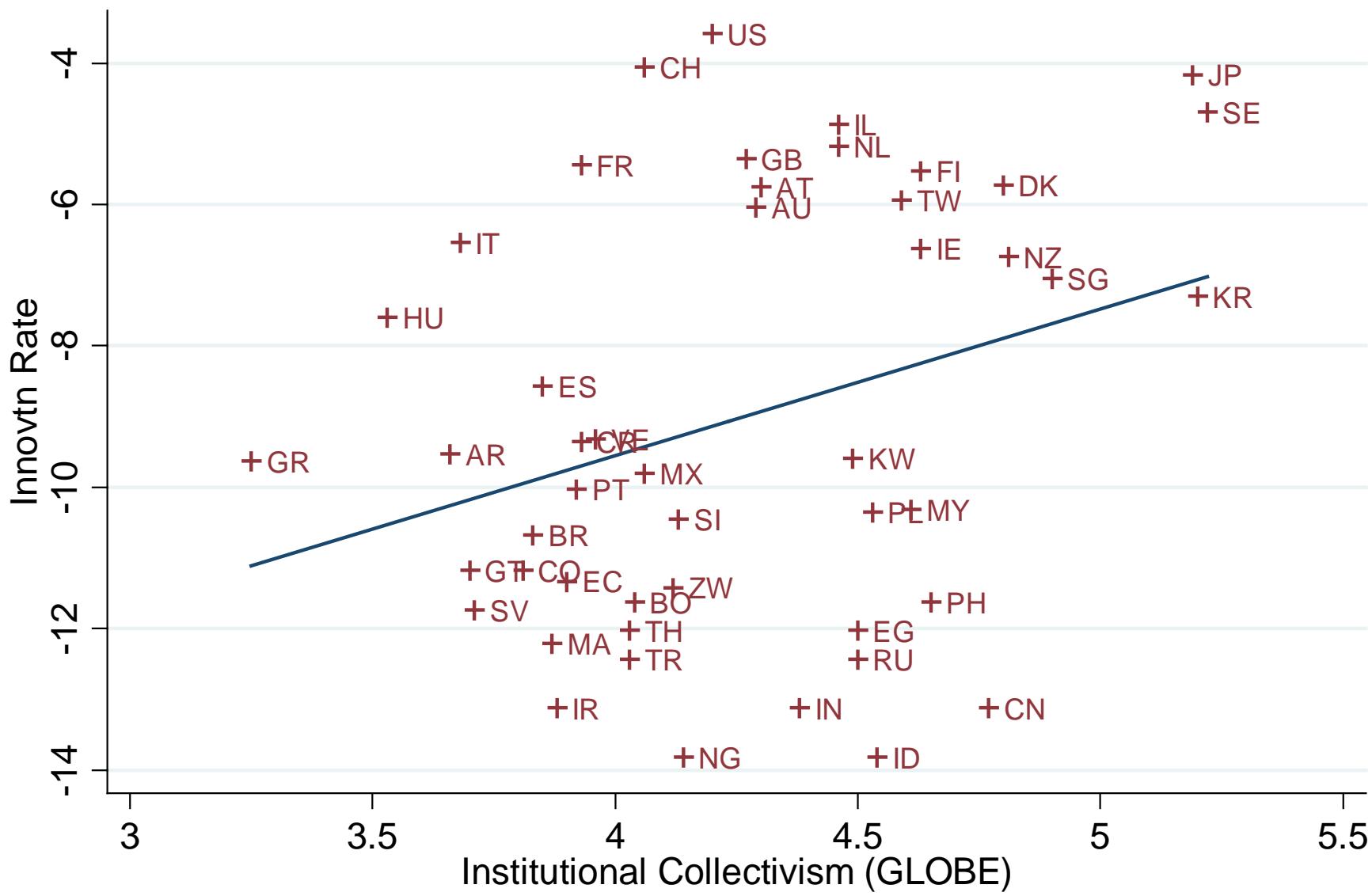
INDEPENDENT measures of same phenomena!

## Data on economic, institution, and policy variables

So let's triangulate, run regressions, and let the data speak for itself!







**Results hold even when controls added for:**

<b>-level of development</b>	<b>-military spending</b>
<b>-trade openness</b>	<b>-fuel exports</b>
<b>-education spending</b>	<b>-R&amp;D spending</b>

**For full results and discussion: ([www.mzak.net/research](http://www.mzak.net/research))**

**Taylor, Mark Z. and Sean P. Wilson**

**“Does Culture Still Matter?: The Effects of Individualism on National Innovation Rates”**

***Journal of Business Venturing 27:234-247 (Jan 2012).***

## Q2: Is there a cultural “fit” to STI Policies & Institutions?

Tentative answers (macro-institutions): Yes!

- FREE MARKETS may aid innovation more in individualistic societies than collectivist
- DEMOCRACY may aid innovation more in individualistic societies than collectivist
- POLITICAL DECENTRALIZATION may aid innovation more in indiv. societies than collectivist

## Surprise Finding:

**CULTURE MATTERS FOR INNOVATION:**

- in the aggregate
- over the long-run

## So What?

**Business: don't let stereotypes guide geographic R&D investments  
do consider culture when designing incentives and rewards**

**Policymakers: do consider culture when designing/importing institutions & policies**

**SciSIP Scholars: consider adding culture as a causal variable  
bring in anthropologists to confirm stats, find causal mechanisms, etc.**

