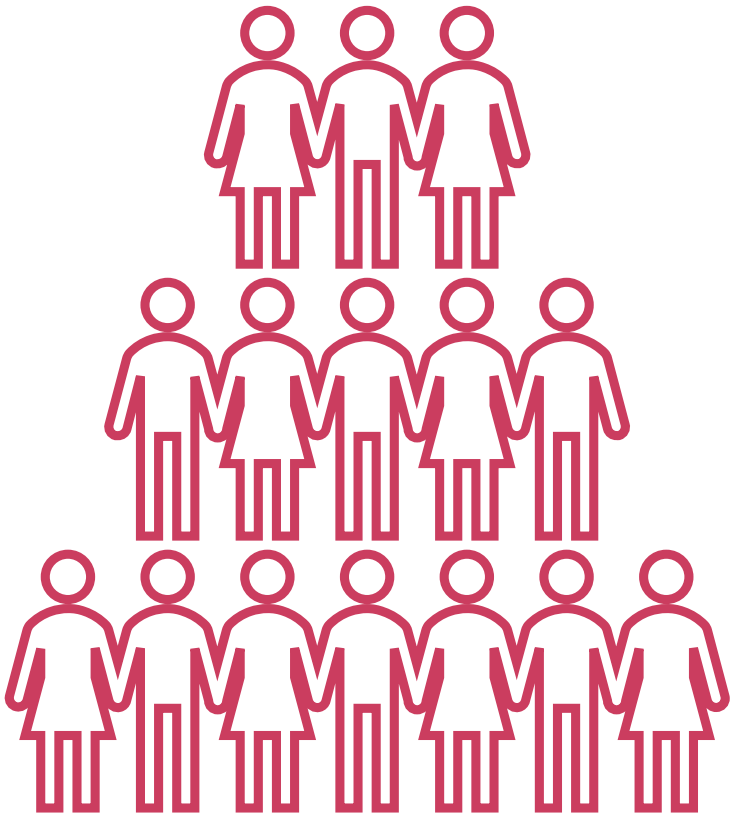
Organisational Economics and the State

Oriana Bandiera (LSE)

Yrjö Jahnsson Award Lecture

Helsinki, January 24, 2020

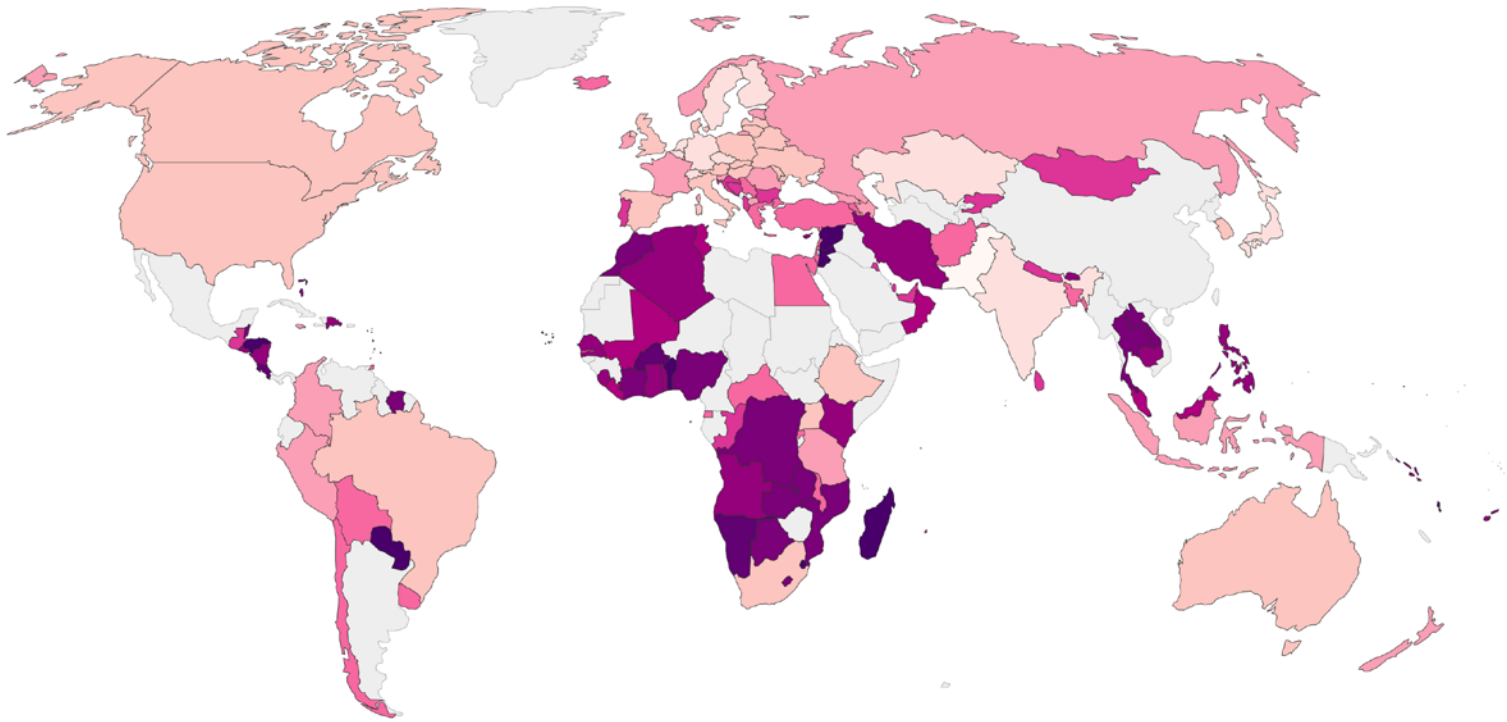
The state is made of people

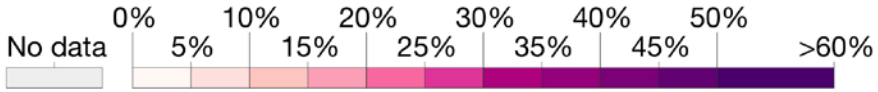


Share of employee compensation in public spending, 2010

Central government expenditures going to the compensation of government employees. Compensation of employees includes all payments (both in cash and in kind), as well as government contributions to social insurance schemes such as social security and pensions that provide benefits to employees.

Our World in Data





Source: World Bank – WDI

OurWorldInData.org/public-spending/ • CC BY-SA

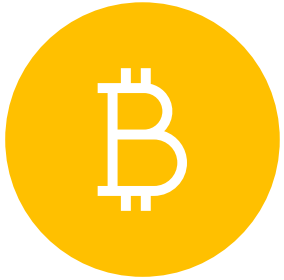
The success or failure of State policies hinges on:

- hiring the “right” people
- motivating them on the job
- enabling them to use their talent

Agency Problems in Bureaucracies

The principal hires an agent to perform a task, for instance a teacher for teaching

The success of the task depends on the teacher's effort



Effort is costly to the agent and not observed by the principal

The agent will choose the effort level that makes her happy, this is often different from what the principal wants (misalignment)

Two causes of misalignment

1. the agent is lazy -puts a higher weight on his cost of effort ("passive" waste)
2. the agent is corrupt - exploits his position for his own private gain ("active" waste)

Telling them apart is:

- Difficult, because the symptoms are the same
- Essential, because the cure for one makes the other worse

Two common solutions

Rules

Incentives

I will review some recent work on these issues

- Mostly from low-income countries but relevant everywhere
- Mostly from field experiments
- Exclusively on bureaucrats or frontline workers
  - Hired, not elected

Solution I: Rules

- Rules that prescribe behaviour limit the number of tasks whose success depends on the agent's effort
- Requires monitoring
- Might curtail active waste at the price of more passive waste

Solutions differ

The US army VS. Netflix

INCH-POUND
MIL-C-44072C
30 April 1990
SUPERSEDING
MIL-C-44072B
9 December 1987
W/CHANGE 12 February 200

MILITARY SPECIFICATION

COOKIES, OATMEAL; AND BROWNIES; COCOLATE COVERED

This specification is approved for use by all Departments and Agencies of the Department o Defense.

1. SCOPE

1.1 Scope. This specification covers chocolate covered oatmeal cookies and chocolate covered brownies inflexible bags for use by the Department of Defense as a component of operational rations.

1.2 Classification. The product shall be of the following types as specified (see 6.1):

Type I - Brownies, chocolate covered
Type II - Oatmeal cookies, chocolate covered

2. APPLICABLE DOCUMENTS

2.1 Government documents

2.1.1 Specifications, standards and handbooks. The following specifications, standards, and handbooks form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those listed in the issue of the Department of Defense Index of Specifications and Standards (DODISS) and supplement thereto, cited in the solicitation (see 6.1)

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: Commander, U.S. Army Soldier Systems Command, Natick Research, Development, and Engineering Center, ATTN: SSCNC-WRE, Natick, MA 01760-5018 by using the self-addressed Standardization Documen Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

AMSC N/A FSC 8920

DISTRIBUTION STATEMENT A. Approved for public release; distribution is unlimited.
SPECIFICATIONS

Commercial Fats and Oils chapter in the Official and Tentative Methods of the American Oil Chemists Society. The shortening may contain alpha monoglycerides and an antioxidant or combination of antioxidants, as permitted by the Federal Grain Inspection Service (FGIS), and the Federal Food, Drug, and Cosmetic Act and regulations promulgated thereunder.

3.2.5 Nuts.

3.2.5.1 Nuts, almonds, shelled. Shelled almond pieces shall be of the small piece size classification and shall be U.S. No. 1 Pieces of the U.S. Standards for Grades of Shelled Almonds. A minimum of 95 percent, by weight, of the pieces shall pass through a 4/16-inch diameter round hole screen and not more than 5 percent, by weight, shall pass through a 2/16-inch diameter round hole screen. The shelled almonds shall be coated with an approved food grade antioxidant and shall be of the latest season's crop.

3.2.5.2 Nuts, pecans, shelled. Shelled pecan pieces shall be of the small piece size classification, shall be of a light color, and shall be U.S. Grade No. 1 Pieces of the U.S. Standards for Grades of Shelled Pecans. A minimum of 90 percent, by weight, of the pieces shall pass through a 4/16-inch diameter round hole screen and not more than 2 percent, by weight, shall pass through a 2/16-inch diameter round hole screen. The shelled pecans shall be coated with an approved food grade antioxidant and shall be of the latest season's crop.

3.2.5.3 Nuts, walnuts, shelled. Shelled walnut pieces shall be of the small piece size classification, shall be of a light color, and shall be U.S. No. 1 of the U.S. Standards for Shelled English Walnuts. A minimum of 90 percent, by weight, of the pieces shall pass through a 4/16-inch diameter round hole screen and not more than 1 percent, by weight, shall pass through a 2/16-inch diameter round hole screen. the shelled walnuts shall be coated with an approved food grade antioxidant and shall be of the latest season's crop.

3.2.6 Whole eggs, liquid or frozen. Whole eggs may be liquid or frozen and shall have been processed and labeled in accordance with the Regulations Governing the Inspection of Eggs and Egg Products (7 CFR Part 59). The whole eggs shall be egg whites and egg yolks in their natural proportions as broken directly from the shell eggs as evidenced by a USDA Egg Products Inspection Certificate. For liquid whole eggs, the USDA certificate shall state the date and time of pasteurization. Liquid whole eggs shall be held at a temperature of 40^{0}F or lower and shall be held for not more than 72 hours from the time of pasteurization until the start of formulation of the product in which they are used. Frozen whole eggs shall be held at 10^{0}F or lower and used within 120 days from the date of production. The whole eggs shall be free from off-odors and off-flavors, such as sulfide-like, fruity, sour, musty, or metallic, and shall be free from foreign materials.

3.2.6.1 Eggs, whole, dried. Dried whole eggs or free-flowing dried whole eggs may be used. The anticaking ingredient in the free-flowing dried whole eggs may be either silicon dioxide or sodium silicoaluminate. The amount of silicon dioxide shall be not more than 1 percent by weight of the dried whole eggs, and the amount of sodium silicoaluminate shall be less than 2 percent by weight of the dried whole eggs. The dried whole eggs and free-flowing dried whole eggs shall contain not less

Polyoxyethylene (20) sorbitan monostearate	Not more than 0.5
Sugar	Not more than 48.5
Salt (per 100 pounds of coating)	2 ounces
Vanillin (per 100 pounds of coating)	1 ounce

1/ The coating shall be enriched with vitamins in not less than the following amounts:

Thiamine (as thiamine mononitrate)	8.0 mg per pound
Pyridoxine (as pyridoxine hydrochloride)	8.0 mg per pound
Ascorbic acid (vitamin C)	320.0 mg per pound
Vitamin A	20,000 I.U. per pound

(NOTE: Estimated loss of vitamins due to processing is approximately 15 percent for all but thiamine which is about 30 percent. The amounts cited above shall represent after-processing values.)

3.3.11 Chocolate coating preparation. The formula for chocolate coating shall be blended on a dry-solids basis. Sorbitan monostearate and polyoxyethylene (20) sorbitan monostearate shall be melted, mixed with the added fat and the dry-solids blend and brought to a temperature of not less than 150^0F. The mixture shall be held at that temperature or higher for a period of at least 30 minutes. The coating shall be refined (20 microns or less, 7/10,000 inch) so that is has a smooth mouthfeel without grittiness. The coating shall be such that, when the vacuum packaged product (at least 72 hours after manufacture) is held at a temperature of 100^0F for two hours, the product can be easily removed from the bag without loss of coating. The product shall be allowed to cool at a temperature between 40^0F and 70^0F, for resolidification to occur, for approximately one hour prior to performing the test. The chocolate coating shall be Salmonella free (see 4.5.1.4).

3.4 Finished product requirements (brownies and oatmeal cookies). The finished product shall comply with the following requirements, as applicable:

a. There shall be no foreign material such as, but not limited to, dirt, insect parts, hair, wood, glass, or metal.

b. There shall be no foreign odor or flavor such as, but not limited to, burnt, scorched, stale, sour, rancid, musty, or moldy.

c. There shall be no color foreign to the product.

d. Chocolate coating shall completely cover the product.

e. Product shall not be broken or crushed.

f. The dimensions of the coated brownie shall not exceed 3-1/2 inches by 2-1/2 inches by 5/8 inch.

g. The weight of the coated brownie shall be not less than 46 grams.

h. The texture of the brownie shall be firm but not hard.

of the seal. All other minor outer ply delamination in the pouch seal area or isolated spots of delamination in the body of the pouch that do not propagate when flexed as described above shall be classified as minor defects.

4/ Outer packaging shall be free from foreign matter which is unwholesome, has the potential to cause pouch damage (for example, glass, metal filings) or generally detracts from the clean appearance of the pouch. The following examples shall not be classified as defects for unclean:

a. Foreign matter which presents no health hazard or potential pouch damage and which can be readily removed by gently shaking the package or by gently brushing the pouch with a clean dry cloth.

b. Dried product which affects less than 1/8 of the total surface area of one pouch face (localized and aggregate).

c. Water spots.

5/ If doubt exists as to whether or not the sealing equipment leaves an impression or design on the closure seal surface that could conceal or impair visual detection of seal defects, samples shall be furnished to the contracting officer for a determination as to acceptability.

6/ Applicable to form-fill-seal pouches only.

7/ The initial examination shall be a visual examination of the closed package. Any suspected visual evidence of stress cracks in the aluminum foil (streaks, breaks, or other disruptions in the laminated film) shall be verified by the following physical examination. To examine for stress cracks, the inside surface of both tray-shaped bodies shall be placed over a light source and the outside surface observed for the passage of light. Observation of light through the pouch material in the form of a curved or straight line greater than 2 mm in length shall be evidence of the presence of stress cracks. Observation of light through the pouch material in the form of a curved or straight line 2 mm in length or smaller or of a single pinpoint shall be considered a pinhole. Observation of ten or more pinholes per pouch shall be evidence of material degradation.

4.5.3.3 Bag vacuum examination. The filled and vacuum sealed bags shall be visually examined for proper vacuum level not less than 96 hours after filling and sealing. The sealed bag shall continue to exhibit a tight adherence to the surface contours of the product when a pulling force is applied at the center of each side seal. This force shall be applied by holding each side seal between thumb and forefinger of each hand, and simultaneously exerting a slight pull with both hands. The bag material shall resist this pulling force as evidenced by the material quickly returning to conform to the product edges when the pulling force is relieved. Any evidence of loss of vacuum shall be considered a major defect. The lot size shall be expressed in bags. The sample unit shall be one filled and sealed bag. The inspection level shall be I and the AQL, expressed in terms of defects per hundred units, shall be 0.65.

4.5.3.4 Product inspection. The finished product shall be examined for the defects listed in table II. The lot size shall be expressed in bags. The sample unit shall be the contents of one filled and sealed bag. The sample unit shall be the contents of one filled and sealed bag. The inspection level

Clip slide

Most companies have complex policies around what you can expense, how you travel, what gifts you can accept, etc.

Plus they have whole departments to verify compliance with these policies

NETFLIX

Clip slide

Netflix Policies for Expensing, Entertainment, Gifts & Travel:

"Act in Netflix's Best Interest"

(5 words long)

NETFLIX

"Act in Netflix's Best Interest" *Generally* Means…

1. Expense only what you would otherwise not spend, and is worthwhile for work
2. Travel as you would if it were your own money
3. Disclose non-trivial vendor gifts
4. Take from Netflix only when it is inefficient to not take, and inconsequential
   - "taking" means, for example, printing personal documents at work or making personal calls on work phone: inconsequential and inefficient to avoid

The success or failure of State policies hinges on:

- hiring the “right” people
- motivating them on the job
- enabling them to use their talent

Could the government be run like Netflix?
Or is there something about public ownership that requires rules?

Management of Bureaucrats and Public Service Delivery: Evidence from the Nigerian Civil Service
Rasul and Rogger 2016

Management and Bureaucratic Effectiveness: Evidence from the Ghanaian Civil Service
Rasul, Rogger and Williams 2019

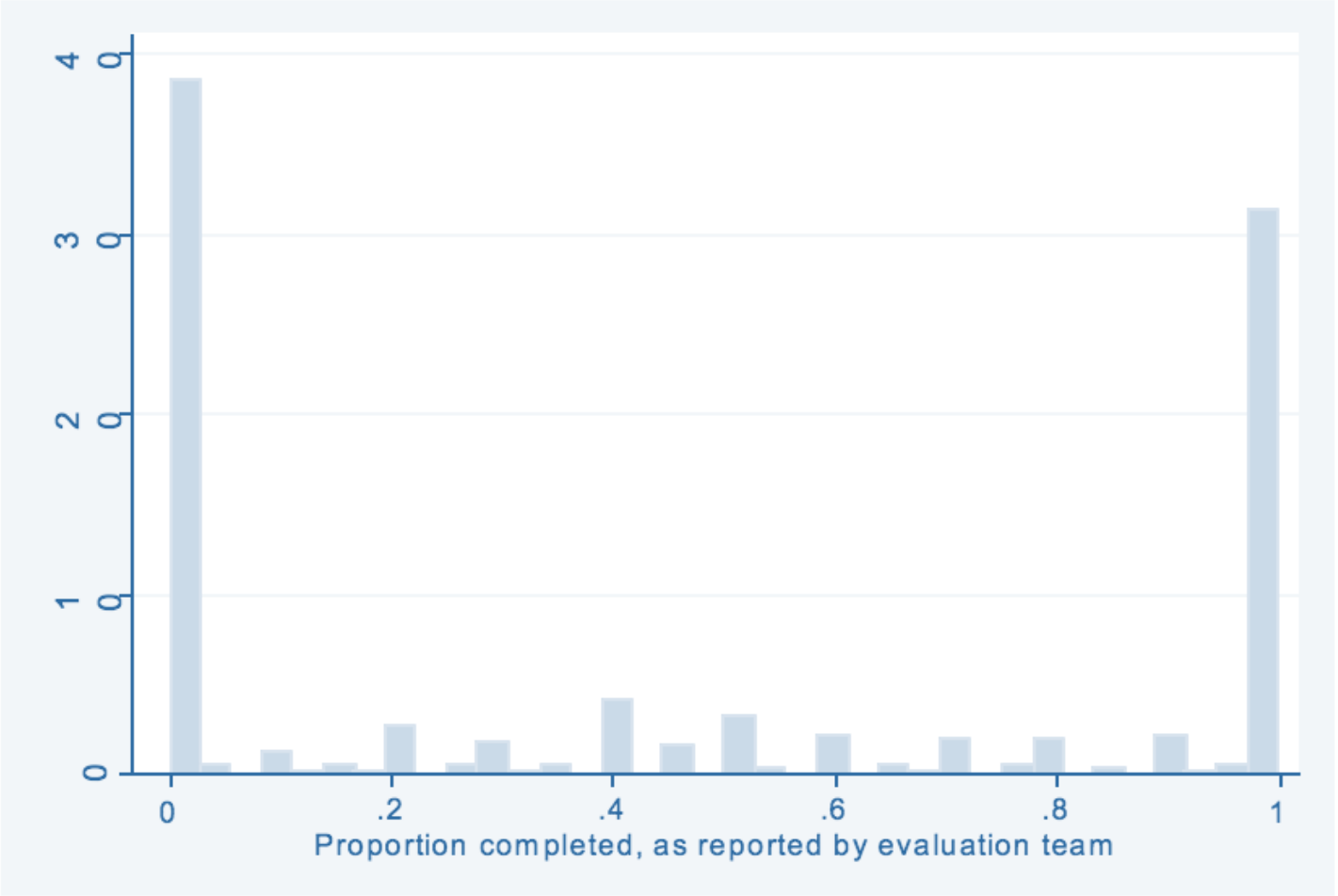
Compare different public bodies that undertake the same development projects in Nigeria and Ghana

- run a management survey to measure autonomy
- find large variation across public bodies
- correlate this with performance

- projects evaluated by independent teams of engineers: (i) completion rate; (ii) quality
- 11 project types (road, borehole, training etc.)

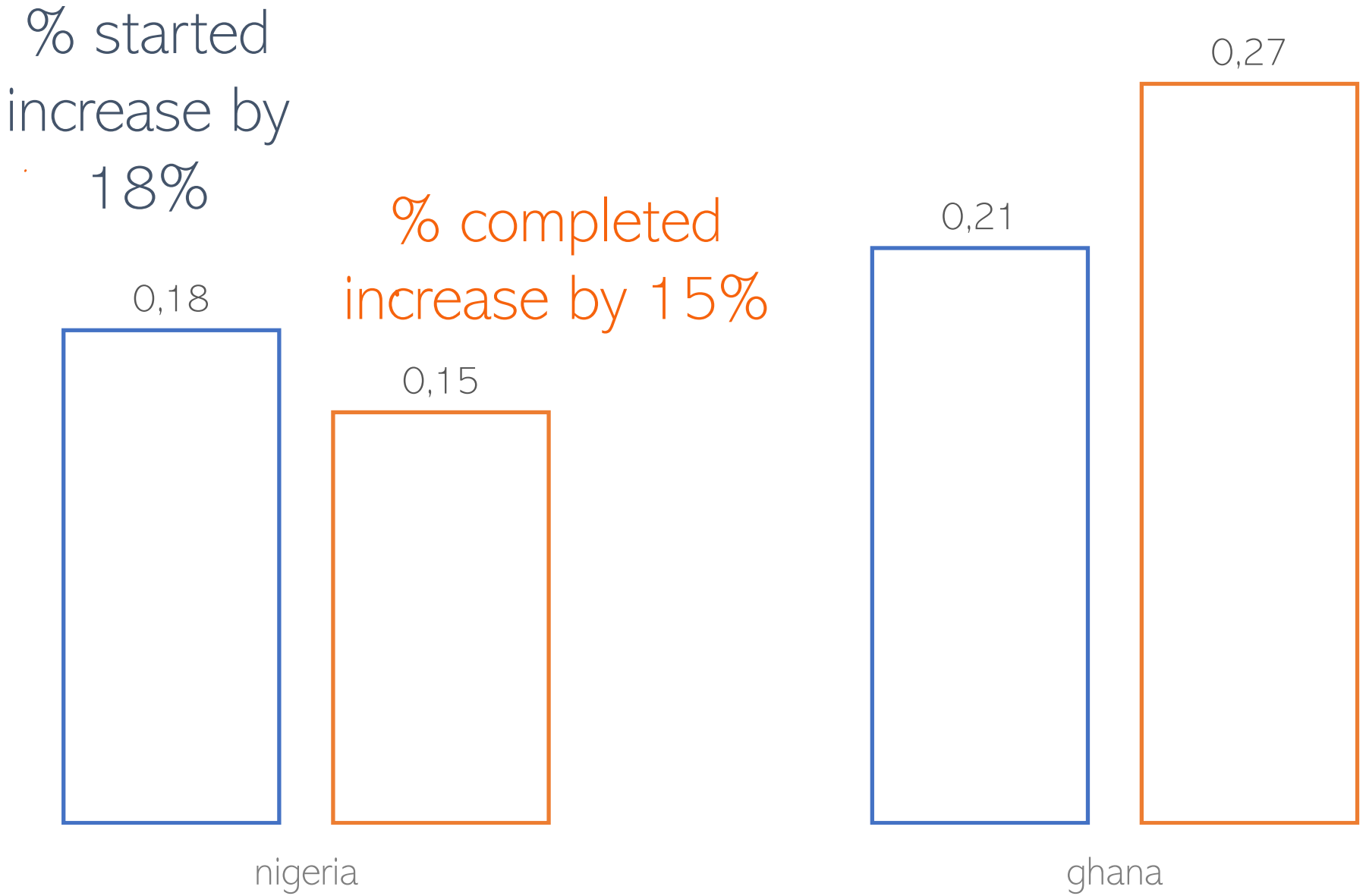
Many projects don't even start, only 30% are completed

Figure B: Proportion Projects Completed



Notes: This is a histogram of the proportion of project completed variable. The sample used to construct the histogram is those projects for which proportion completed evaluation variable and management scores are available.

Effect of 1sd increase in autonomy



Does autonomy improve performance?

Bandiera, Best, Khan and Prat “The Allocation of Authority in Organizations: A Field Experiment with Bureaucrats”

Procurement in Punjab, Pakistan

- Legal authority for procurement is vested in **Procurement Officers** (POs)
    - agent buys goods he doesn't use with money he doesn't own..

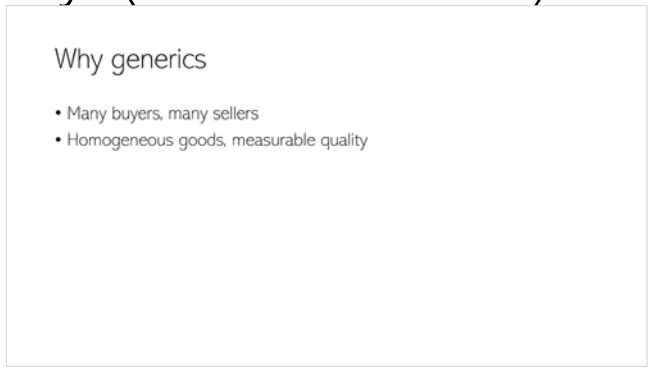
- POs are allocated budget by the Finance Department
- An independent federal agency - office of the **Accountant G** approve POs purchases *before* payment can be made

The Status Quo

1. Public body requires the PO to buy an item
2. PO surveys the market for vendors and chooses one
3. PO sends a request for payment (bill/voucher) to the AG office
4. AG sanctions payment to the vendor or demands more paperwork.

What we do

- Sample 600+ Public bodies across 26 districts and 4 departments
- Assign randomly to control or autonomy (or other, TBD) for the purchase of *generic goods*



- Autonomy:
  - Cash in hand
  - MoF pre-approved list of paperwork

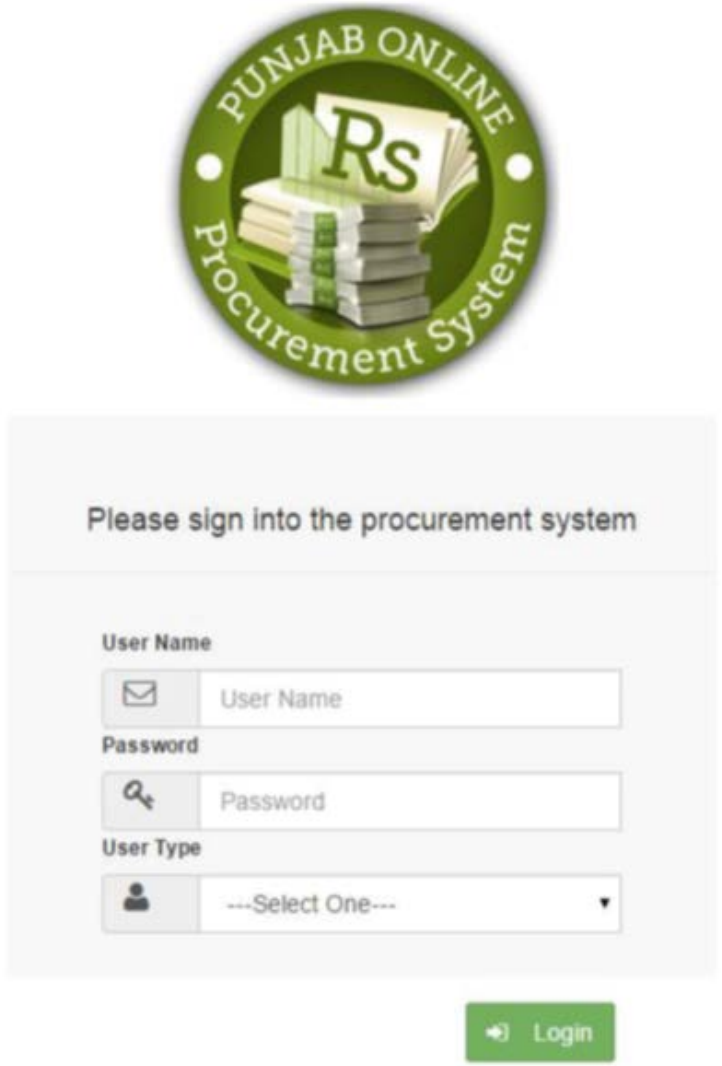
- Both shift power from the auditor to the agents
- Give them freedom to save but also to steal

Why generics

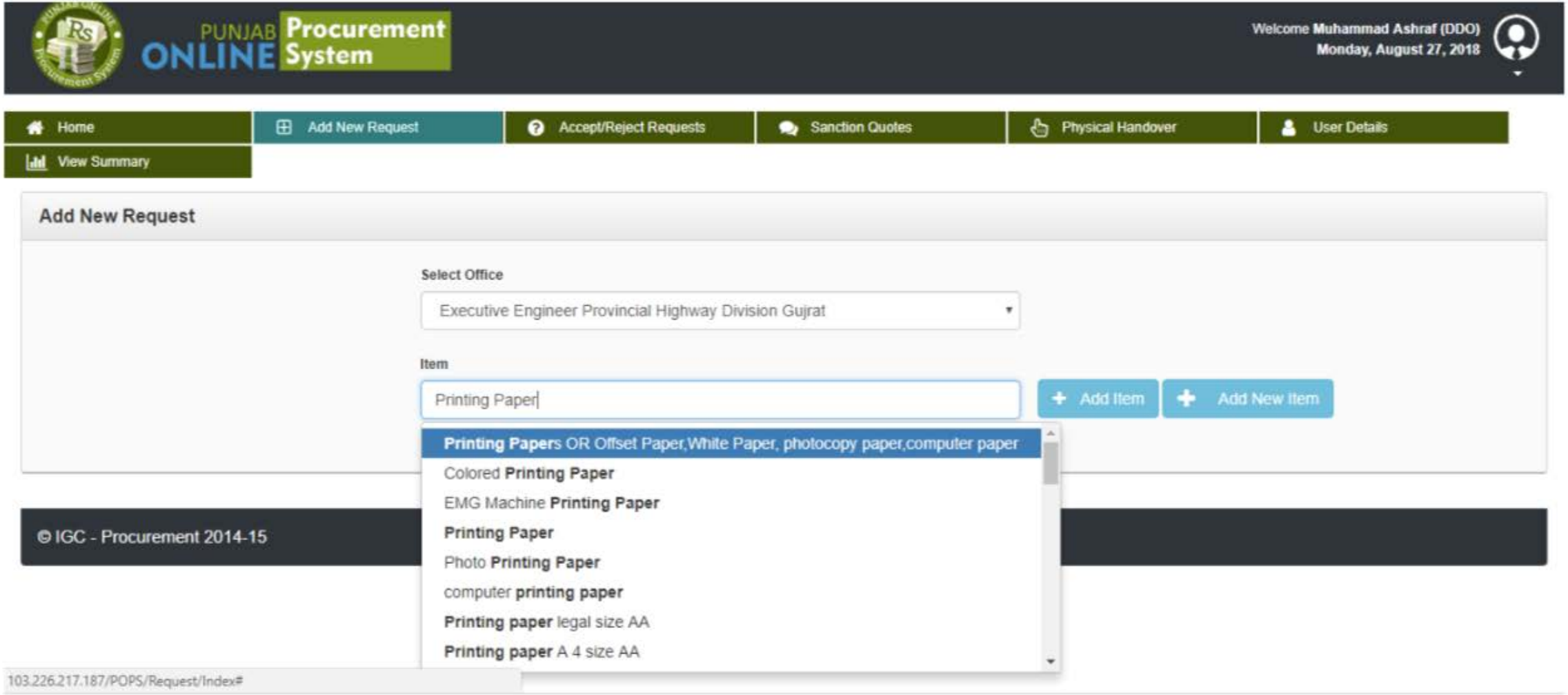
- Many buyers, many sellers
- Homogeneous goods, measurable quality

We set up a system to collect data

Together with Punjab Procurement Regulatory Authority (PPRA) and Punjab Information Technology Board (PITB), we set up an E-Governance platform: Punjab Online Procurement System (POPS)



POPS Collects Detailed Spending Data



brand

HP

Coloured pages

Yes

size

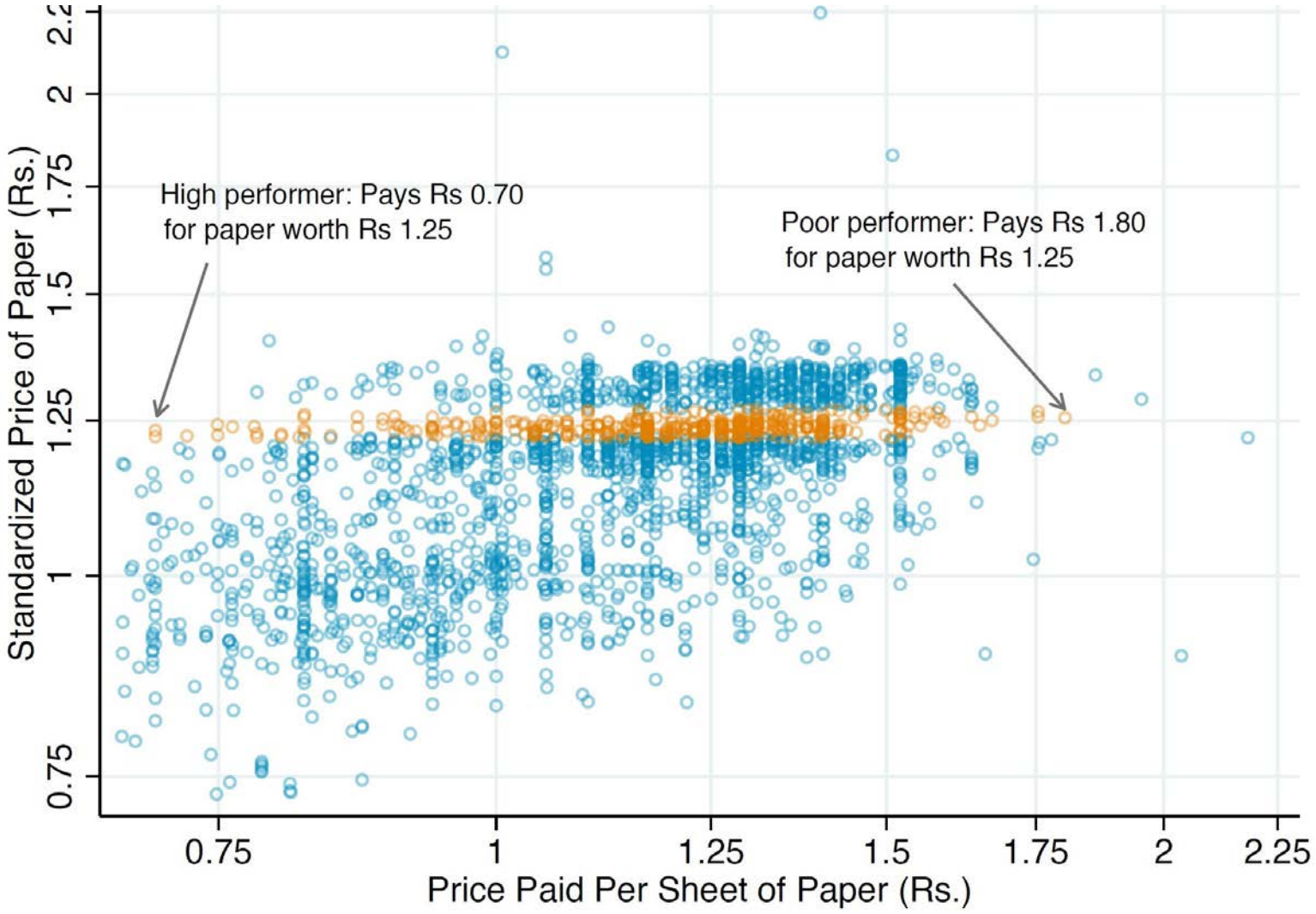
Legal (8.5 in x 14.0 in)

Weight per sheet

80 gm

Cancel Submit

we find that different public bodies pay very different prices for the same good



When we give autonomy prices fall by 9%

quality, composition, timing of purchases do not change

sample savings could fund 5 schools or 75 hospital beds per year

scaling up to all generics => $70m total savings per year

punjab gdp $1500

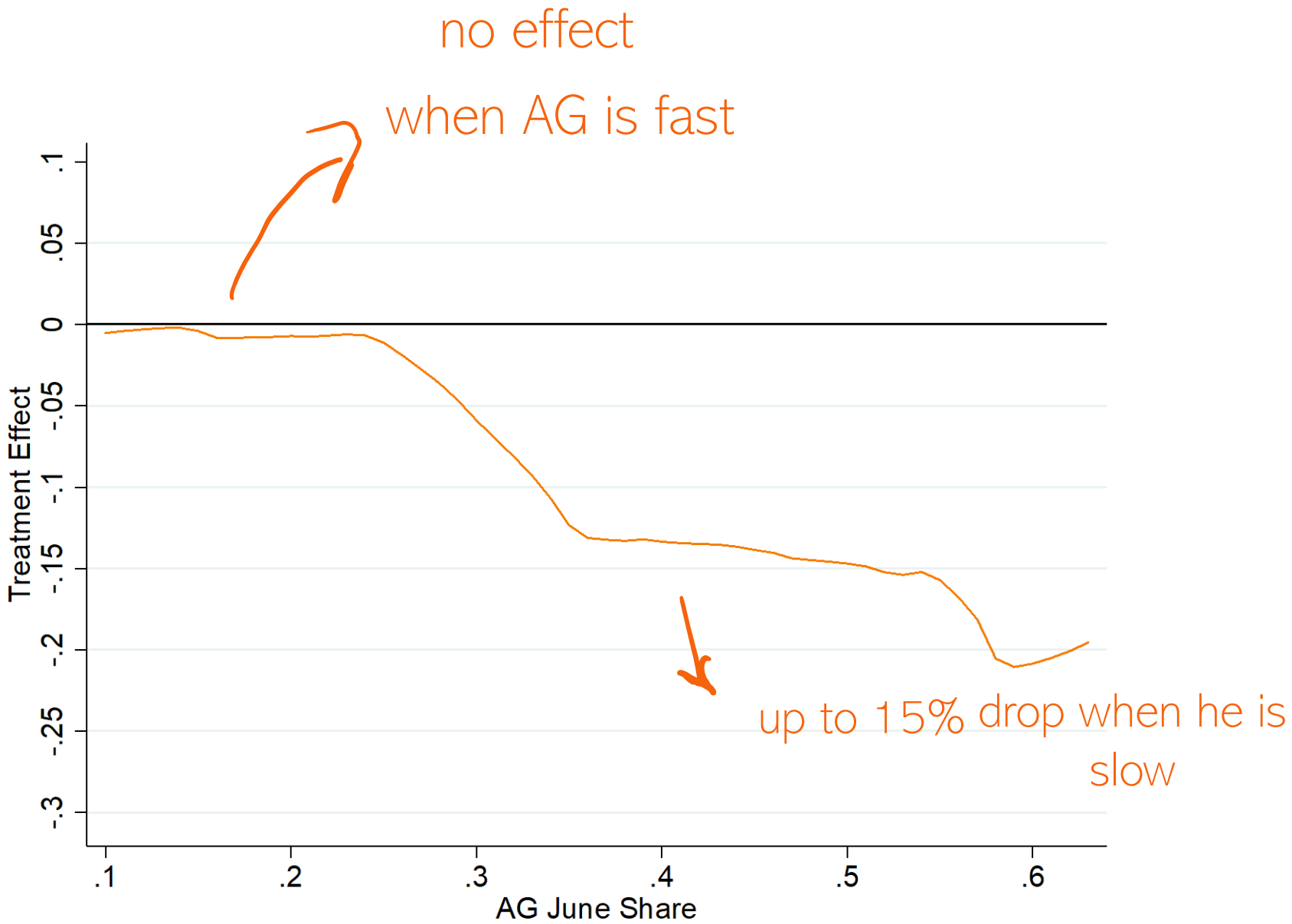
Why?

auditing takes time

only some vendors are willing to wait & charge for waiting

no point for PO to find better deals

removing decision making power from the auditor enables PO to use their talent and local information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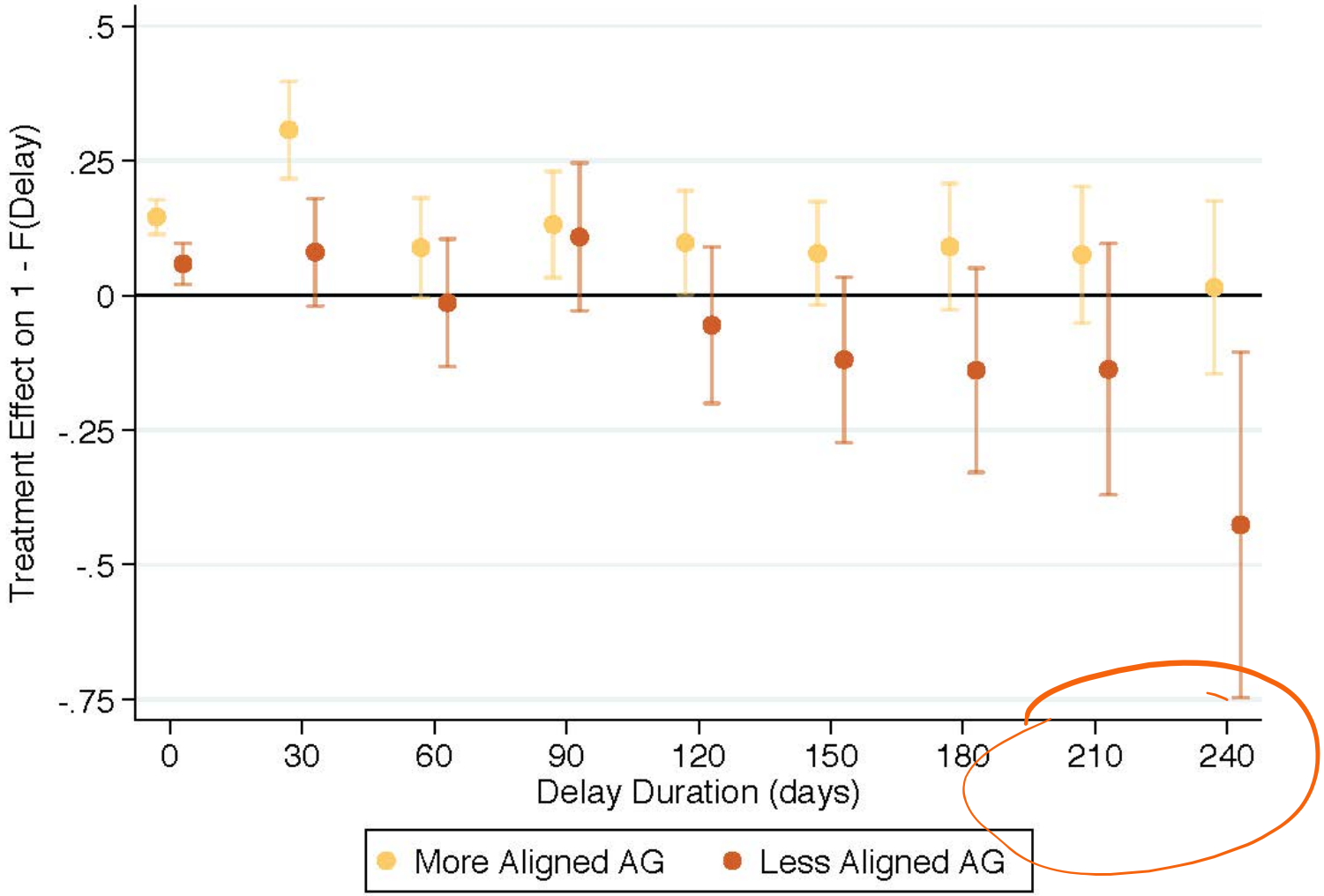


long delays
go down

Not only in Punjab

- Autonomy studies are rare but they all point in the same direction
  - environmental inspections in Gujarat (Duflo et al 2018)
  - public procurement in Italy (Bandiera et al 2009)

- Rules designed to curtail corruption create large efficiency costs

- What is the alternative?

The success or failure of State policies hinges on:

- hiring the “right” people
- motivating them on the job
- enabling them to use their talent

Solution II: Performance Rewards

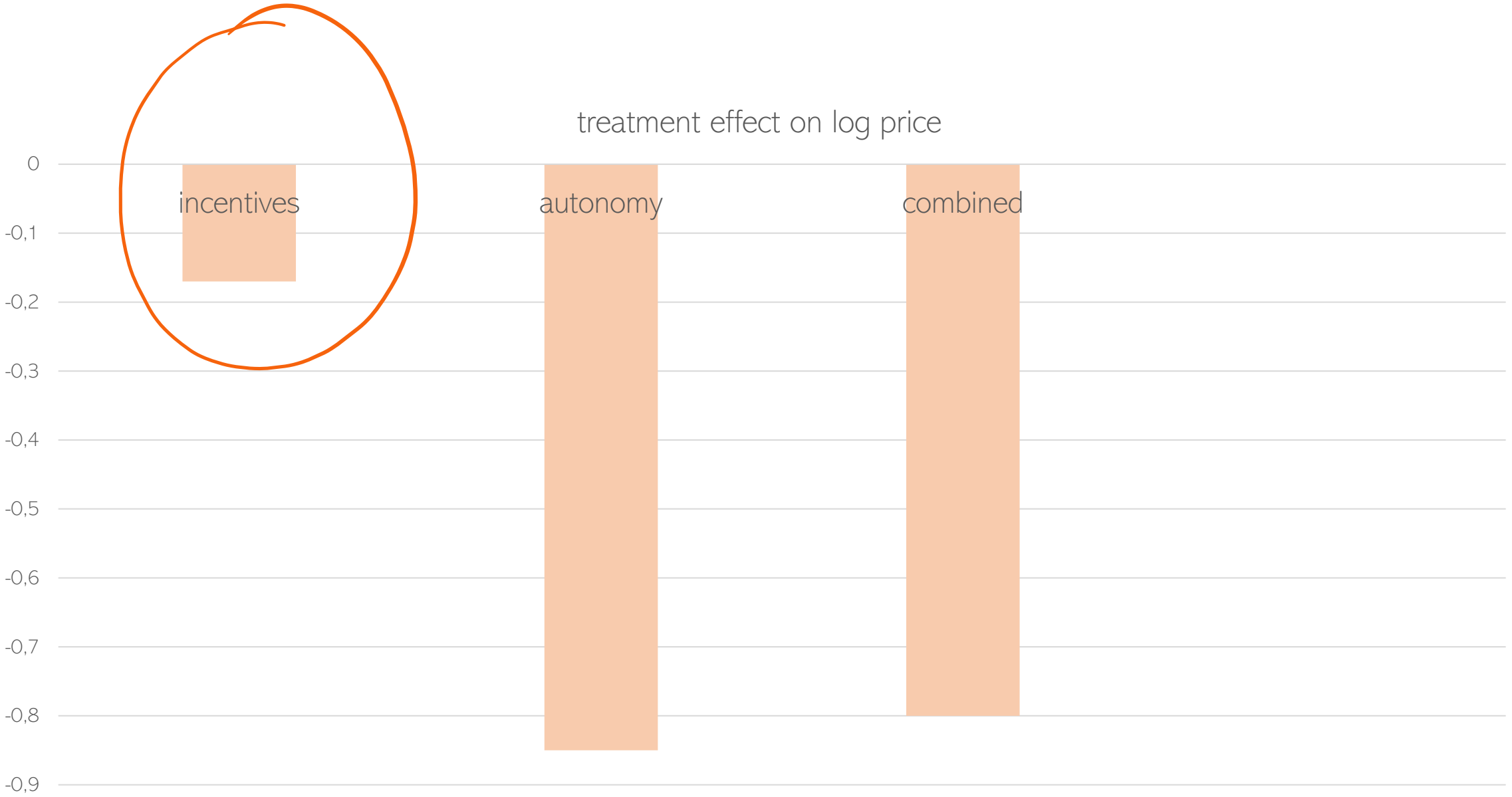
- Motivate, not regulate
- The principal can give the agent a stake in the success of the project
- e.g. bonus based on test scores: if the teacher does not care about the students' learning, he will want to exert effort because this increases his pay.
- Does it work?

You might have heard that incentives in the public sector do not work

- Teacher bonuses that increase sugar consumption
- A&E incentives that lead to a shortage of ambulances

….

- We did try to incentivise the procurement officers in Punjab
  - tournament based on value for money with generous prizes (up to two months salary)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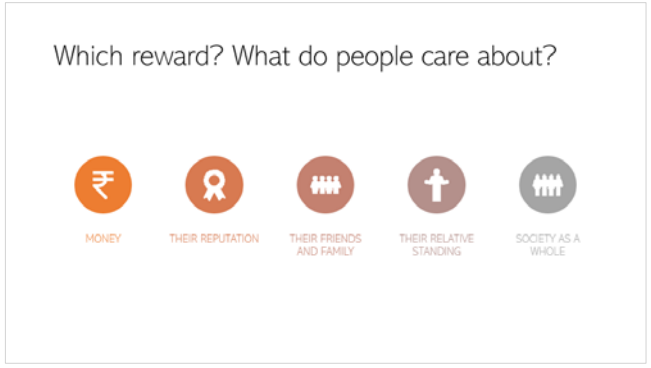
incentives
autonomy
combined

Effective incentives need two ingredients

1. A reward that the agent wants



Which reward? What do people care about?

MONEY

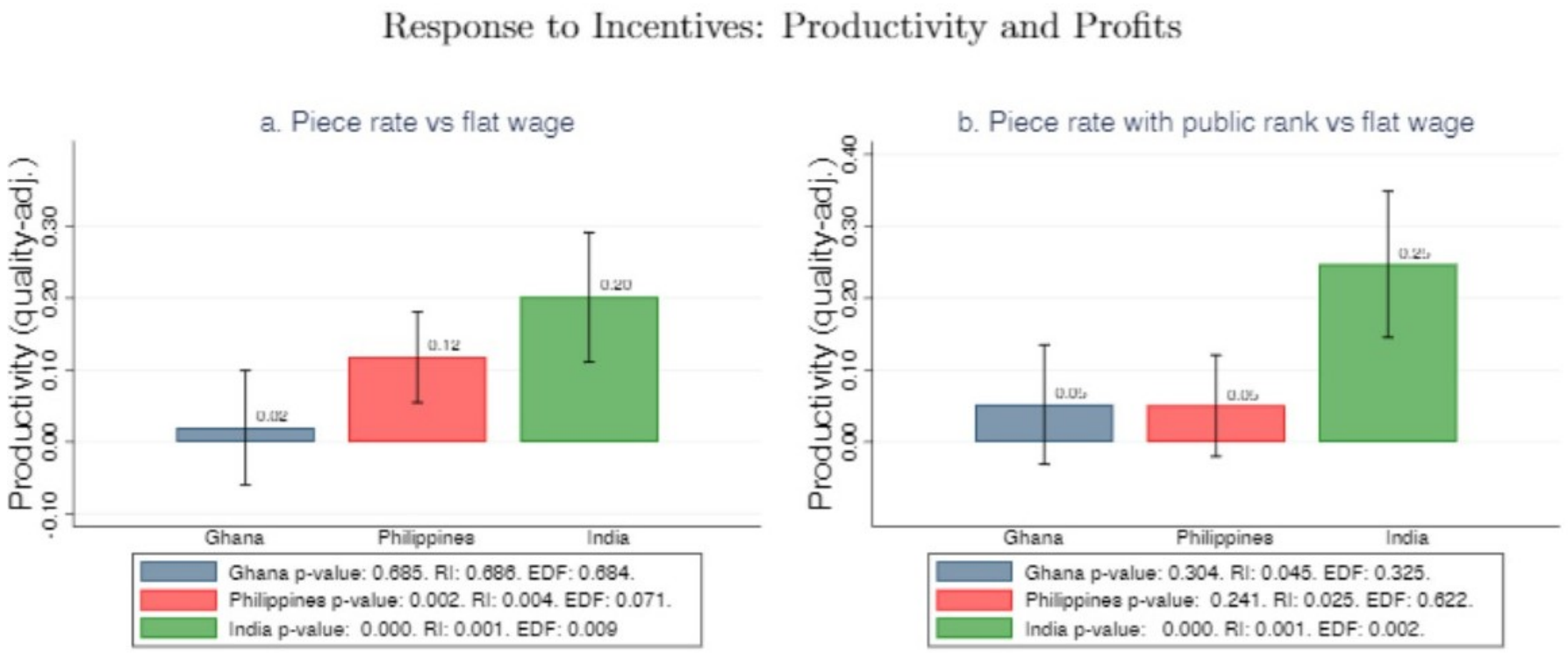
THEIR REPUTATION

THEIR FRIENDS AND FAMILY

THEIR RELATIVE STANDING

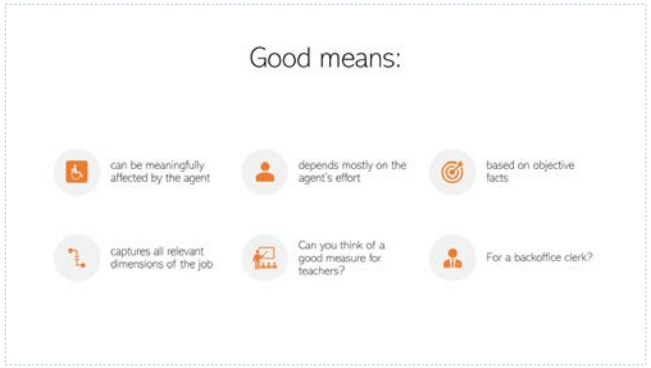
SOCIETY AS A WHOLE

the relative importance of these elements varies by culture



Effective incentives need two ingredients

- A good measure of performance

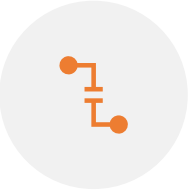


Good means:

can be meaningfully affected by the agent

depends mostly on the agent's effort

based on objective facts



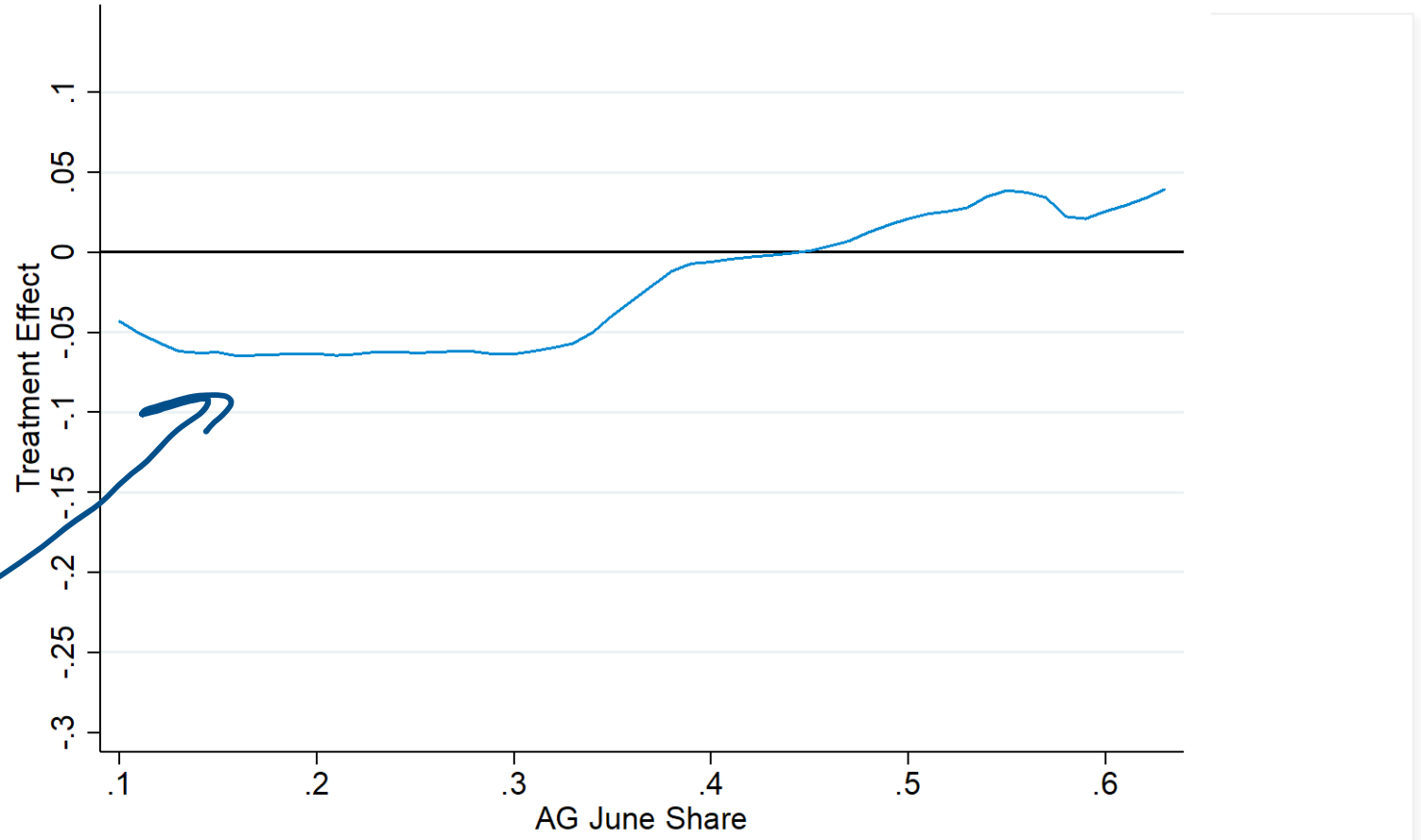
captures all relevant dimensions of the job

Can you think of a good measure for teachers?

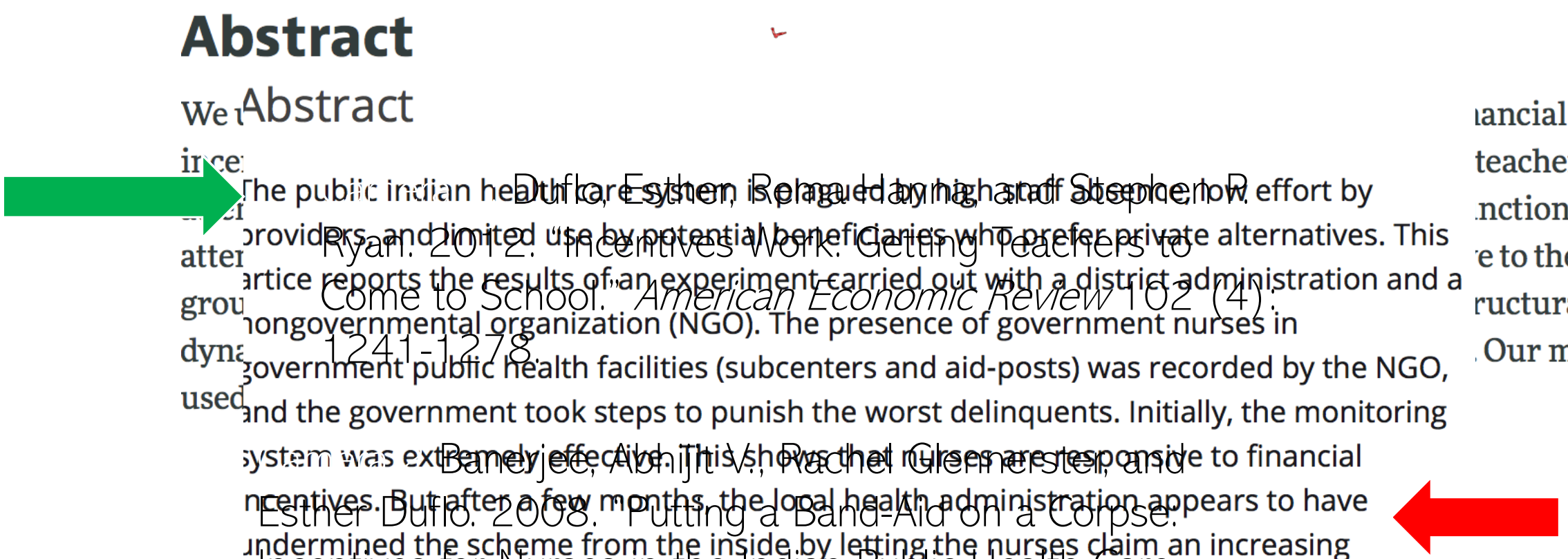
For a backoffice clerk?

What went wrong?

- Delays increased prices regardless of the effort of the agent
- So the agent could not respond to incentives
- When they could they did



Tale of two cameras



Abstract

Abstract

The public indian health care system is plagued by high staff absence, low effort by providers, and limited use by potential beneficiaries who prefer private alternatives. This artice reports the results of an experiment carried out with a district administration and a nongovernmental organization (NGO). The presence of government nurses in government public health facilities (subcenters and aid-posts) was recorded by the NGO, and the government took steps to punish the worst delinquents. Initially, the monitoring system was extremely effective. This shows that nurses are responsive to financial incentives. But after a few months, the local health administration appears to have undermined the scheme from the inside by letting the nurses claim an increasing number of "exempt days." Eighteen months after its inception, the program had become completely ineffective. (JEL: D10, I10, J30)

Duflo, Esther, Rema Hanna, and Stephen P. Ryan. 2012. "Incentives Work: Getting Teachers to Come to School." *American Economic Review* 102 (4): 1241-1278.

Banerjee, Abhijit V., Rachel Glennerster, and Esther Duflo. 2008. "Putting a Band-Aid on a Corpse: Incentives for Nurses in the Indian Public Health Care System." *Journal of the European Economic Association* 6 (2/3): 487-500.

These are general problems with incentives

- when good measures are available and we know what the agent wants, performance rewards work well
  - teachers in India

- none of these problems are specific to the State, except, possibly one

Incentives and Prosociality

- Social preferences play a key role in shaping the response to incentives
- Many public sector jobs have a strong pro-social component
- Thus they attract people with pro-social preferences who do might not need more motivation → poor performance might be due to other constraints

Incentives and Prosociality

- A common concern is that incentives might backfire by attracting selfish individuals who "do it for the money"
- This was precisely the concern of Zambia's MoH HR director, when he was about to launch a recruitment drive for rural nurses in 2010

• *"What will happen now that they see themselves as civil servants? will they retain their connection to the community?" (Mr Mwila, MOH HR director, June 2010)*

The success or failure of State policies hinges on:

- hiring the “right” people
- motivating them on the job
- enabling them to use their talent

- *"What will happen now that they see themselves as civil servants? will they retain their connection to the community?" (Mr Mwila, MOH HR director, June 2010)*

We designed an experiment to answer his question

*Ashraf, Bandiera,Davenport and Lee (2020) "Losing motivation in the quest for talent?"

Control

BENEFITS:

- Learn about the most important health issues in your community
- Gain the skills you need to prevent illness and promote health for your family and neighbors
- Work closely with your local health post and health centre
- Be a respected leader in your community

QUALIFICATIONS:

- Zambian National
- Grade 12 completed with two "O" levels
- Age 18-45 years
- Endorsed by Neighborhood Health Committee within place of residence
- Preference will be given to women and those with previous experience as a CHW

APPLICATION METHOD:

Submit to the **DESIGNATED HEALTH CENTRE** indicated above:

- Completed application form with necessary endorsements. If no blank forms are attached to this notice, kindly obtain a blank one at the nearest health centre.
- Photocopy of school certificate documenting completion of Grade 12 and two "O" levels.
- Photocopy of Zambian national registration card.

For more information: Contact the designated health centre indicated above.

Treatment

BENEFITS:

- Become a highly trained member of Zambia's health care system
- Interact with experts in medical fields
- **Access future career opportunities including:**
  - **Clinical Officer**
  - **Nurse**
  - **Environmental Health Technologist**

QUALIFICATIONS:

- Zambian National
- Grade 12 completed with two "O" levels
- Age 18-45 years
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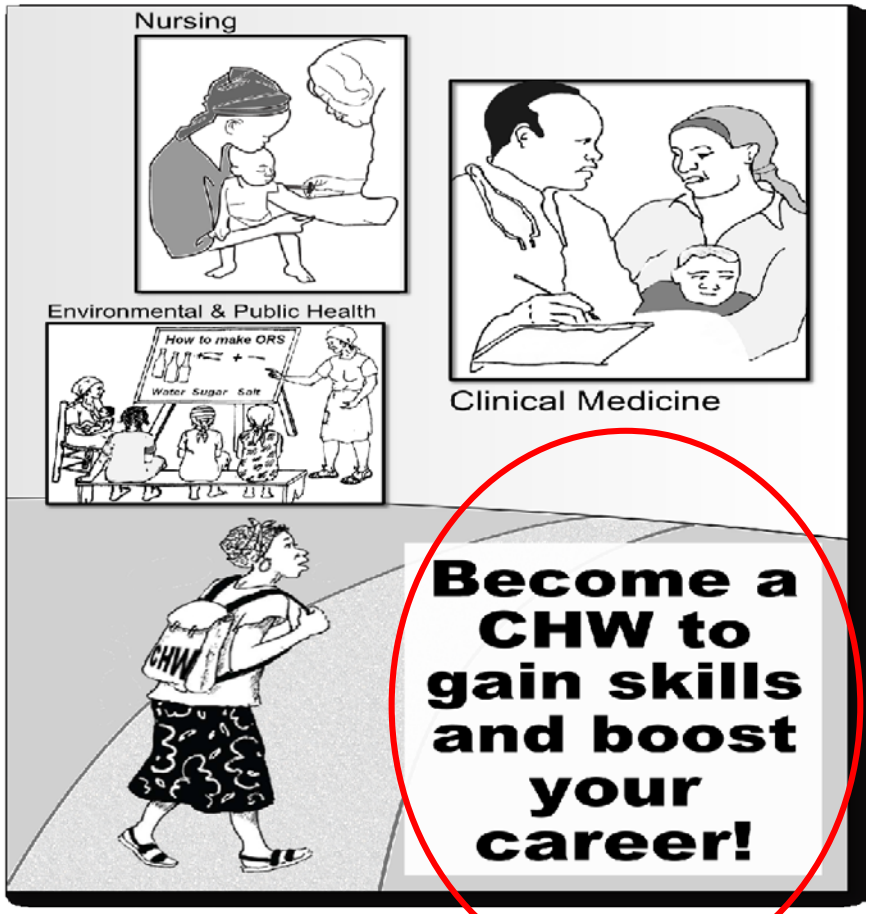
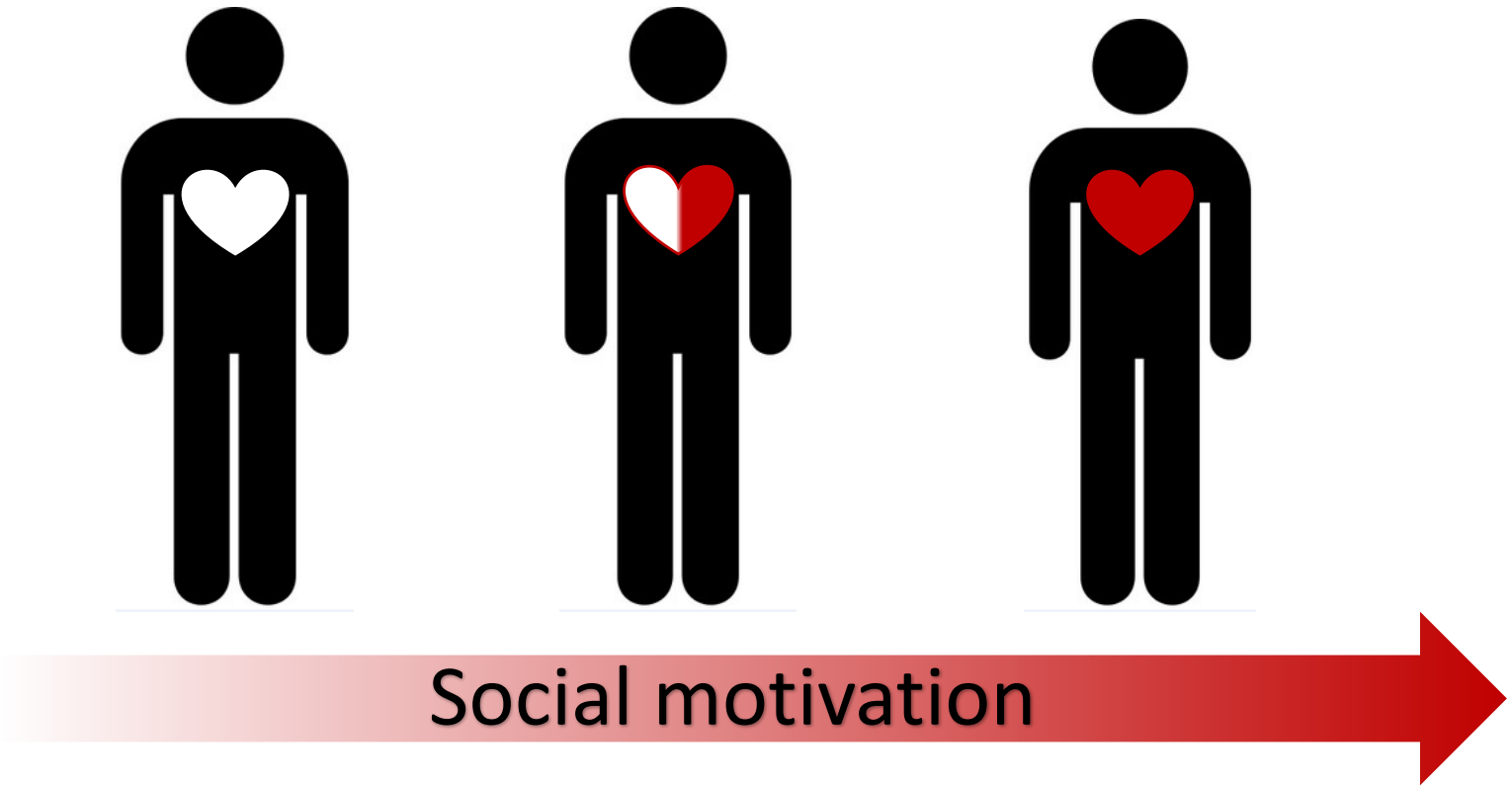


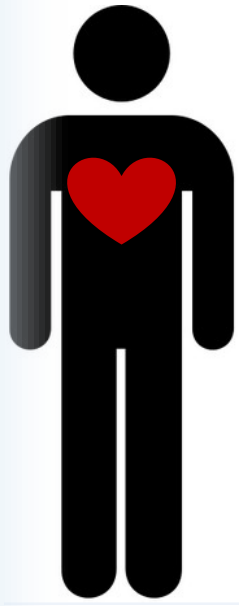
Career advancement = salary increase (CHA=$290, Nurse= $530, EHT=$615, doctor=$1625)

one group did a lot better..

- can you guess which?

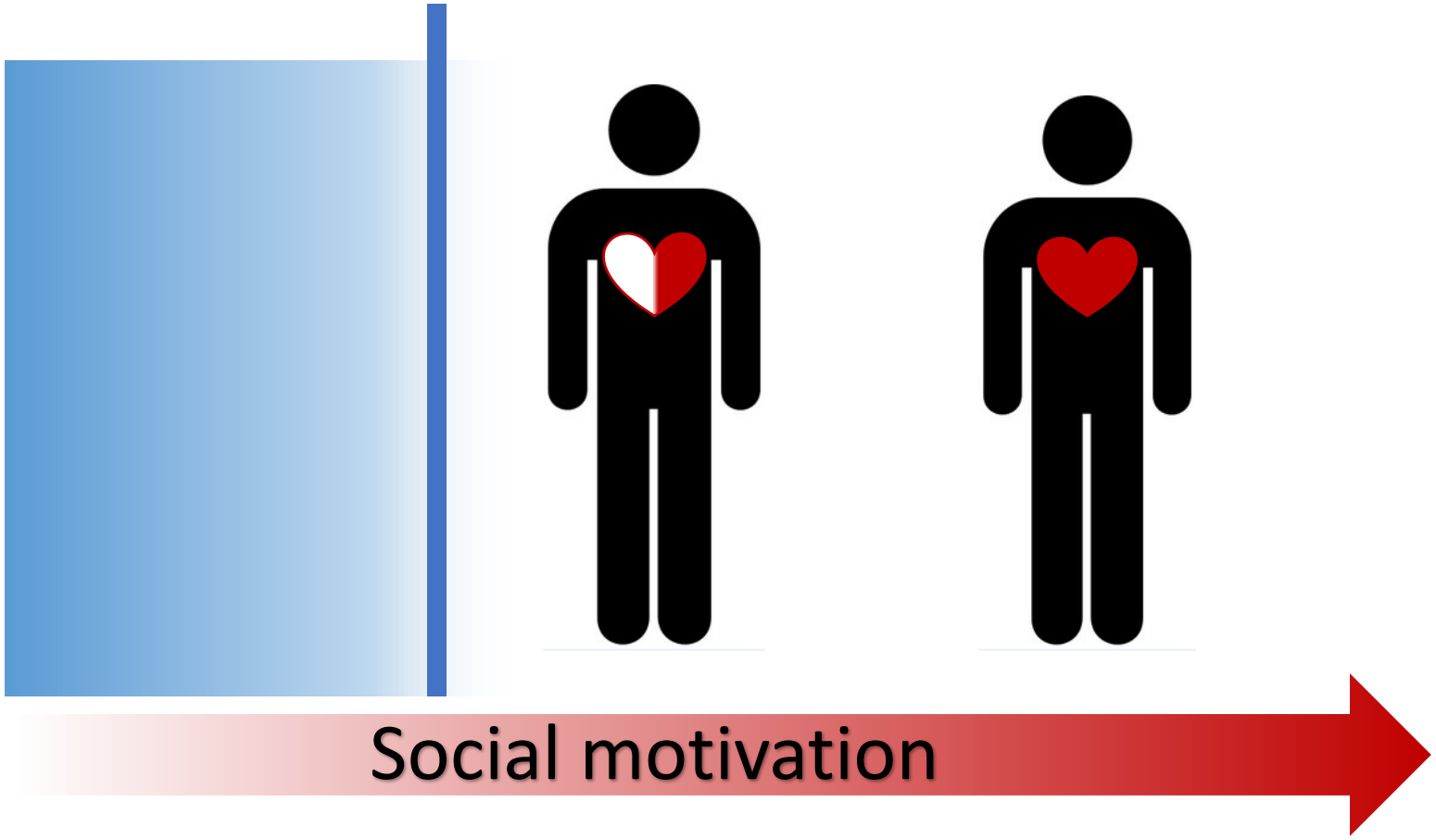

Social motivation

Low rewards



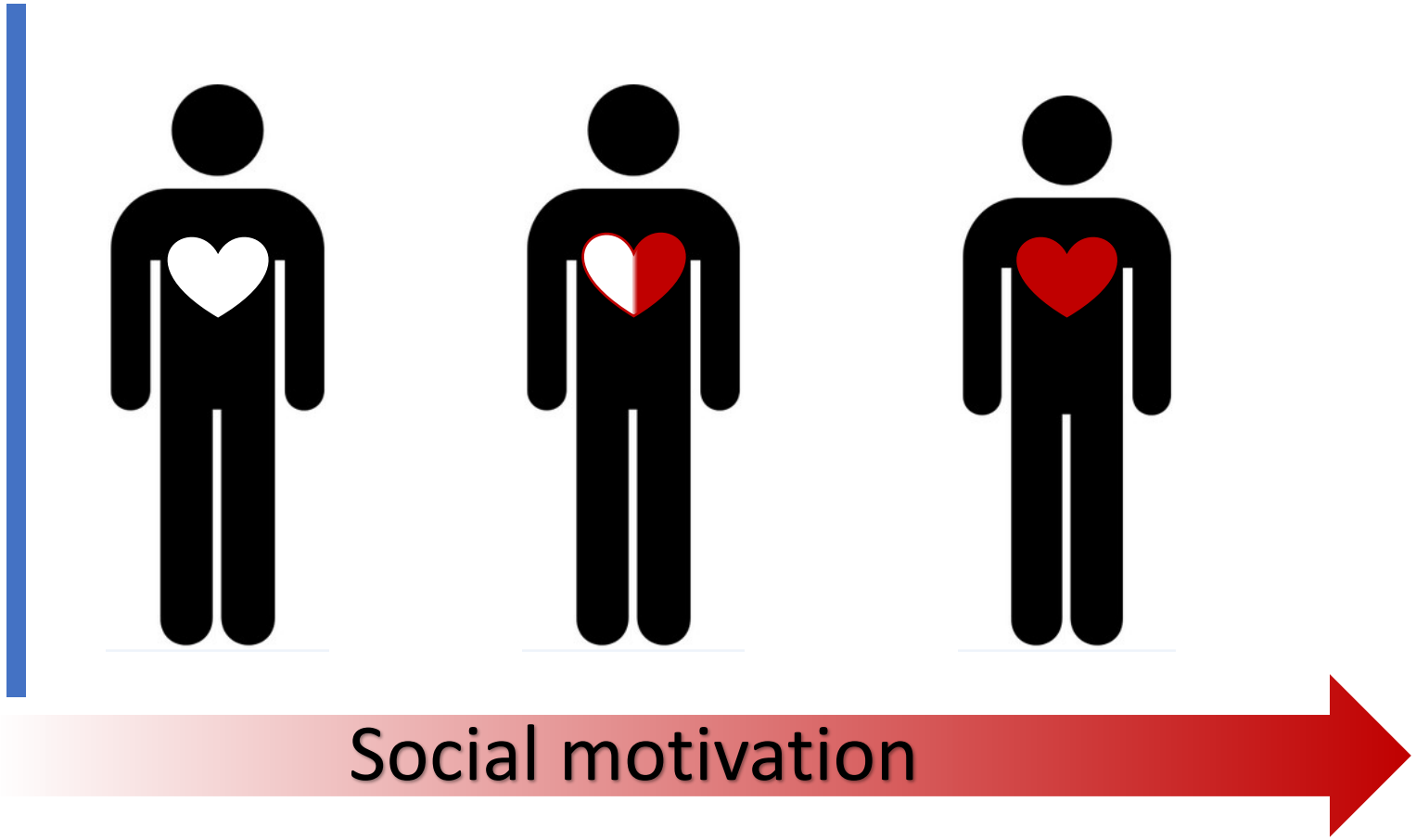
Social motivation

Medium rewards

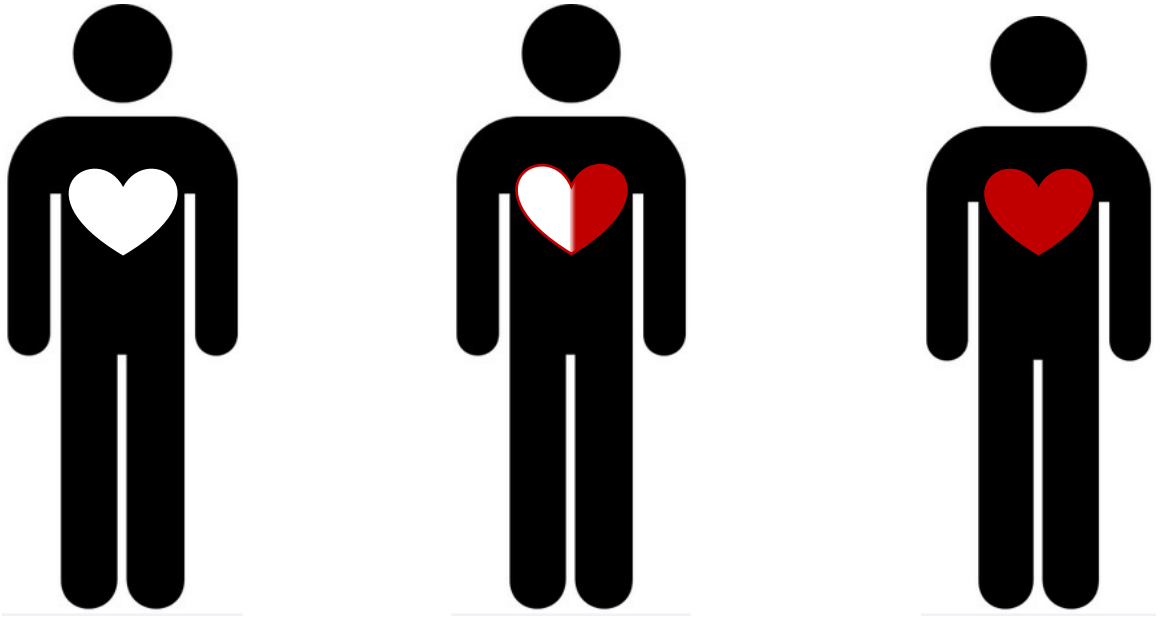


Social motivation

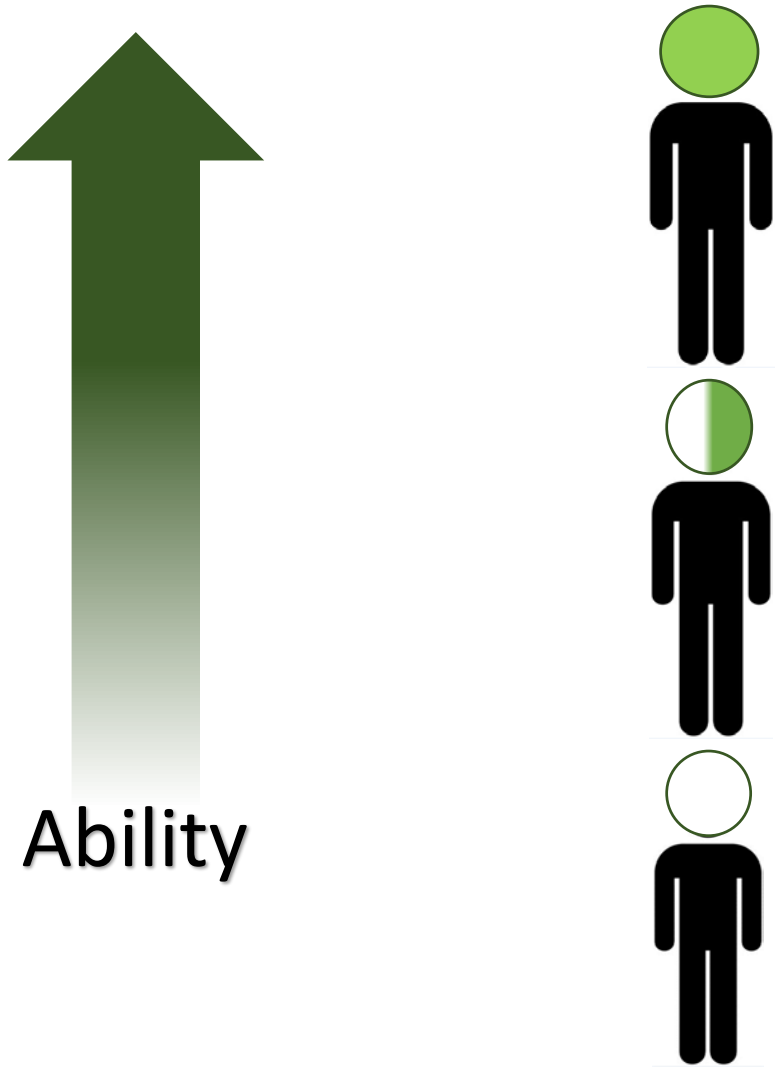
High rewards

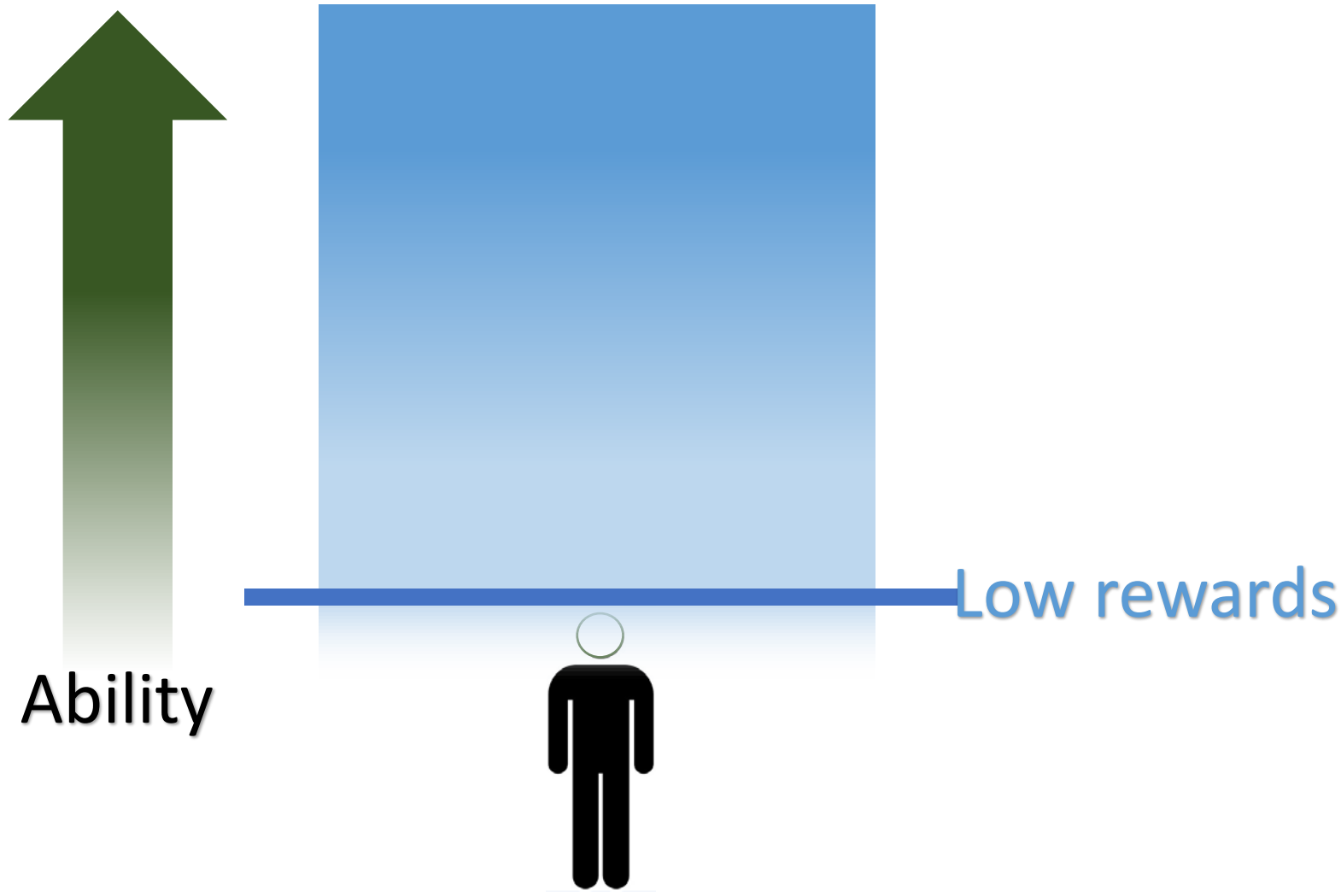


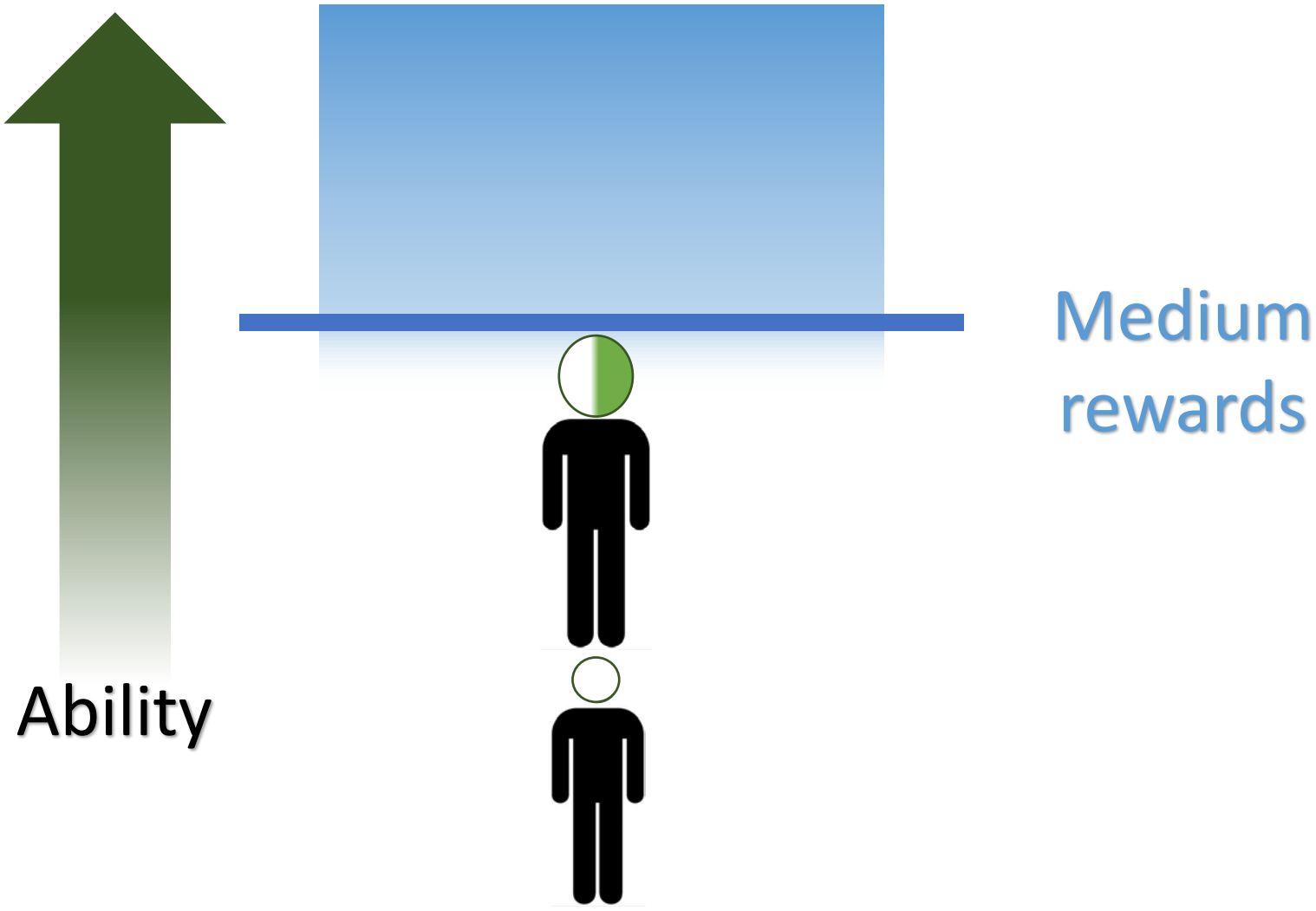
Material benefits

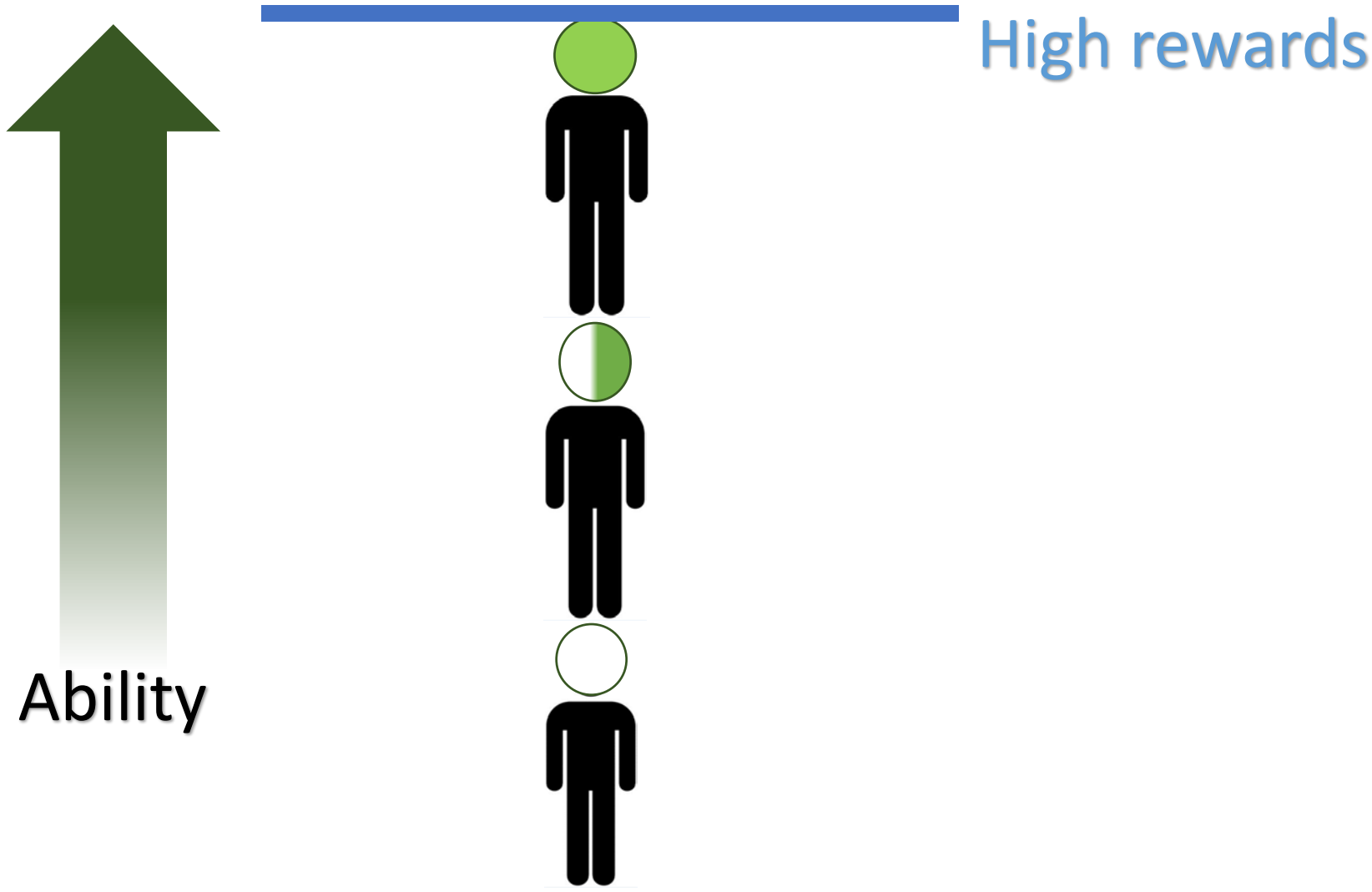


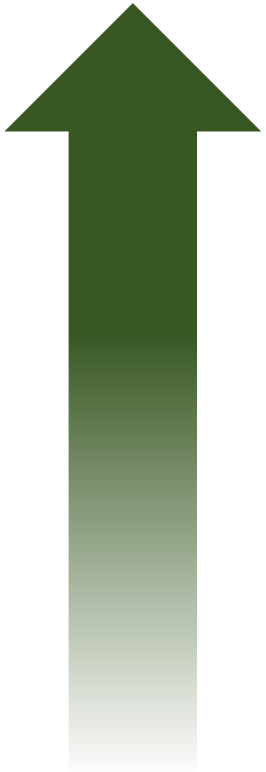
Social motivation


Ability


Ability
Low rewards

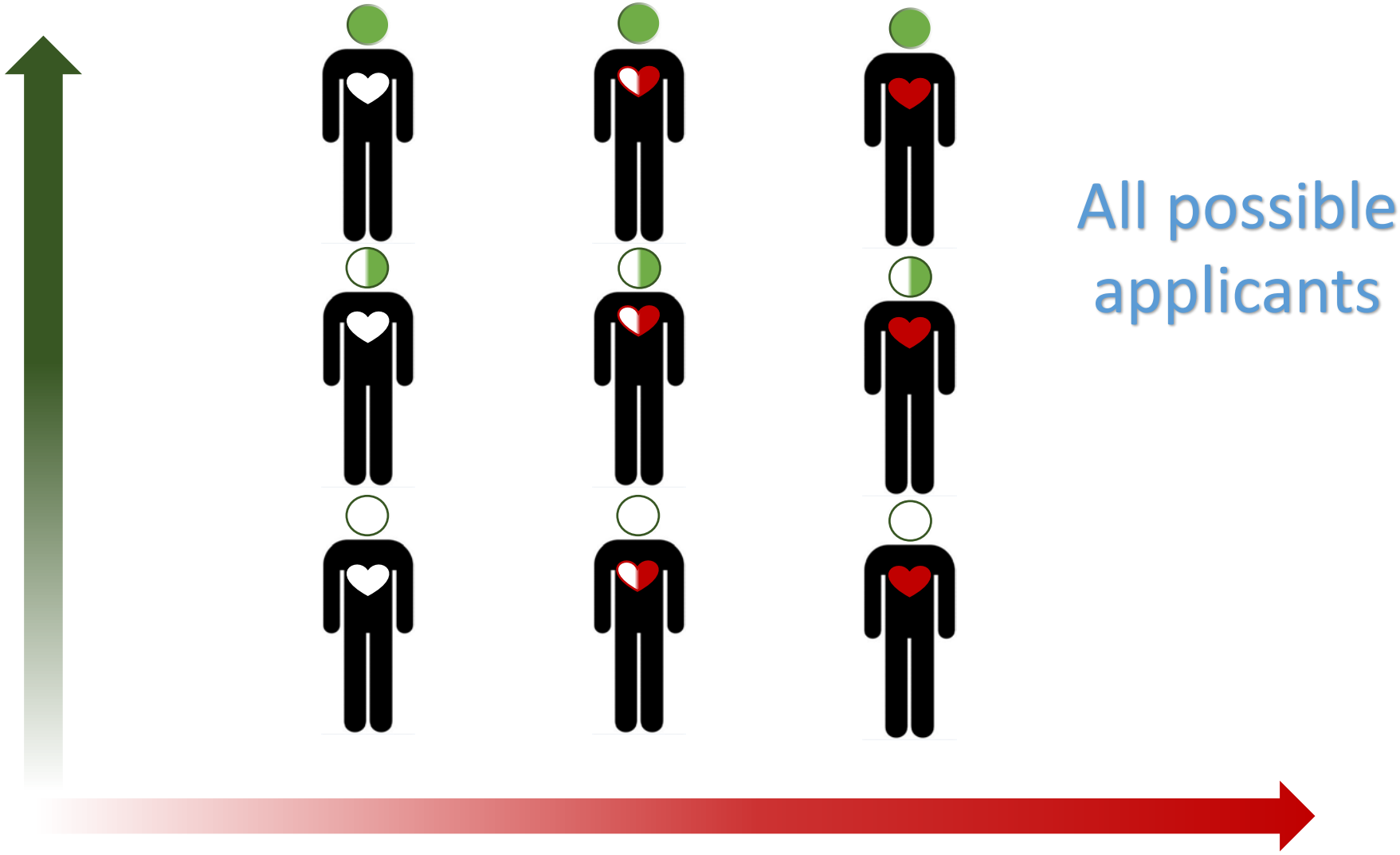

Ability
Medium rewards


High rewards
Ability

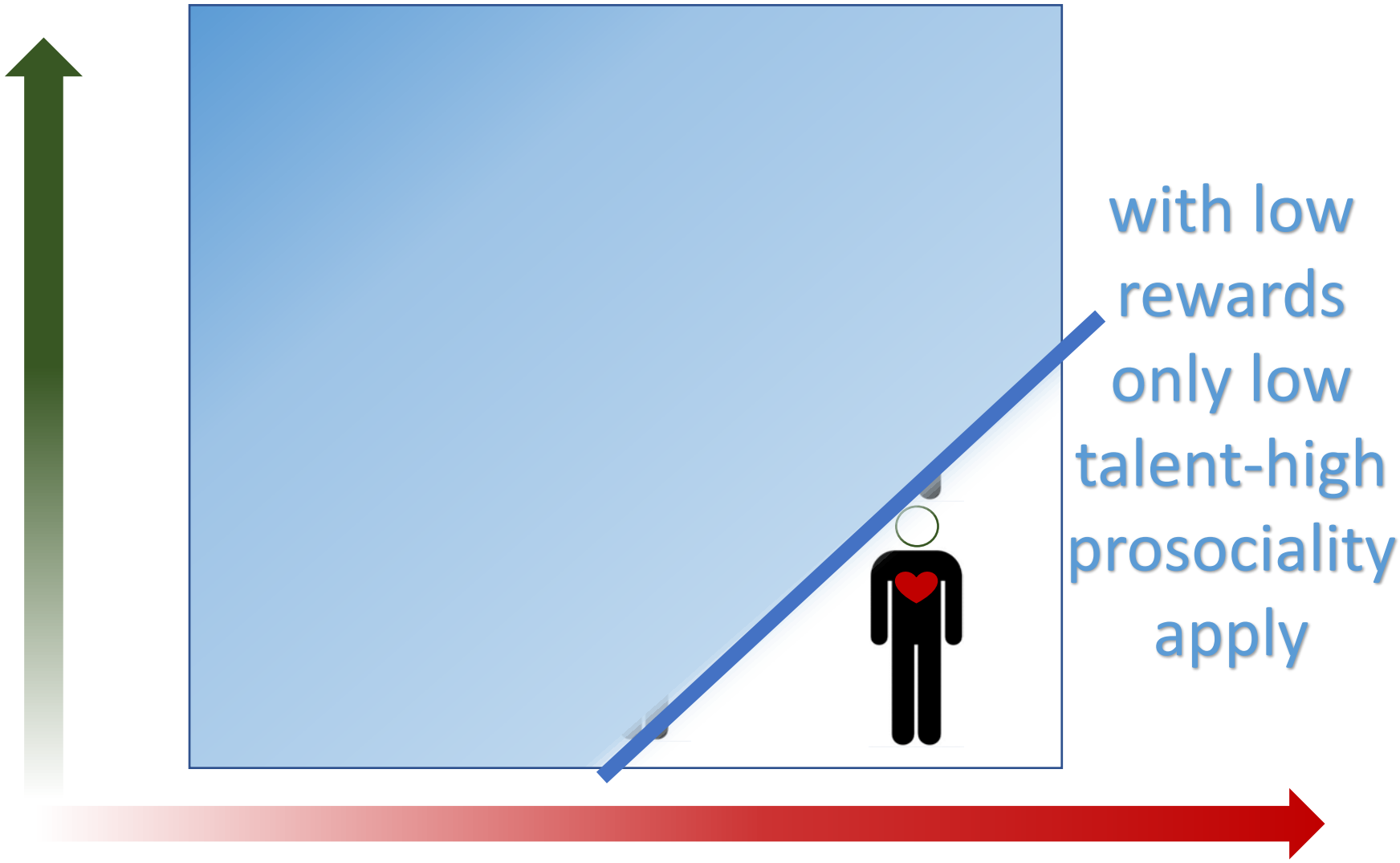


Ability

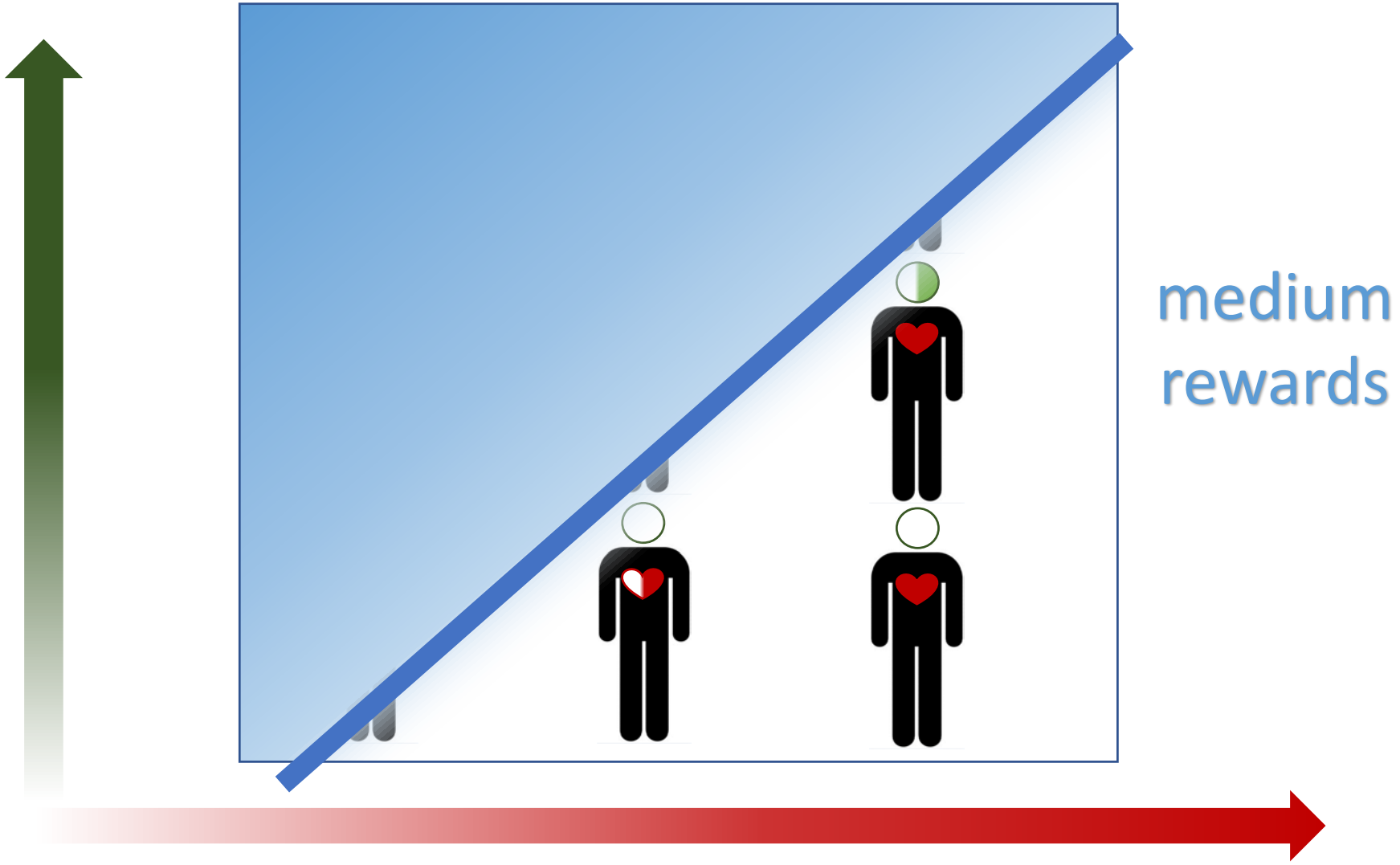
Material benefits



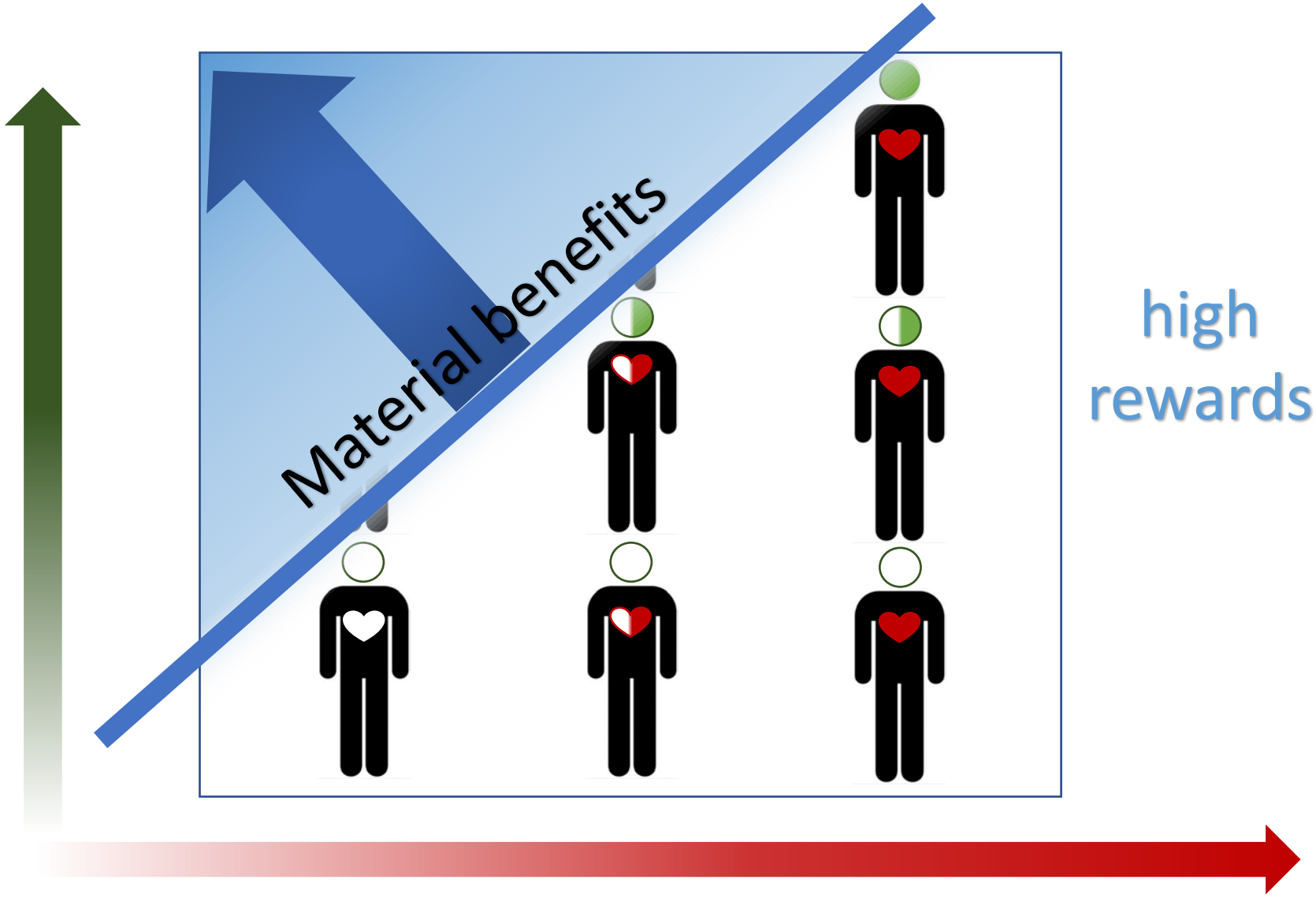
All possible applicants



with low rewards only low talent-high prosociality apply

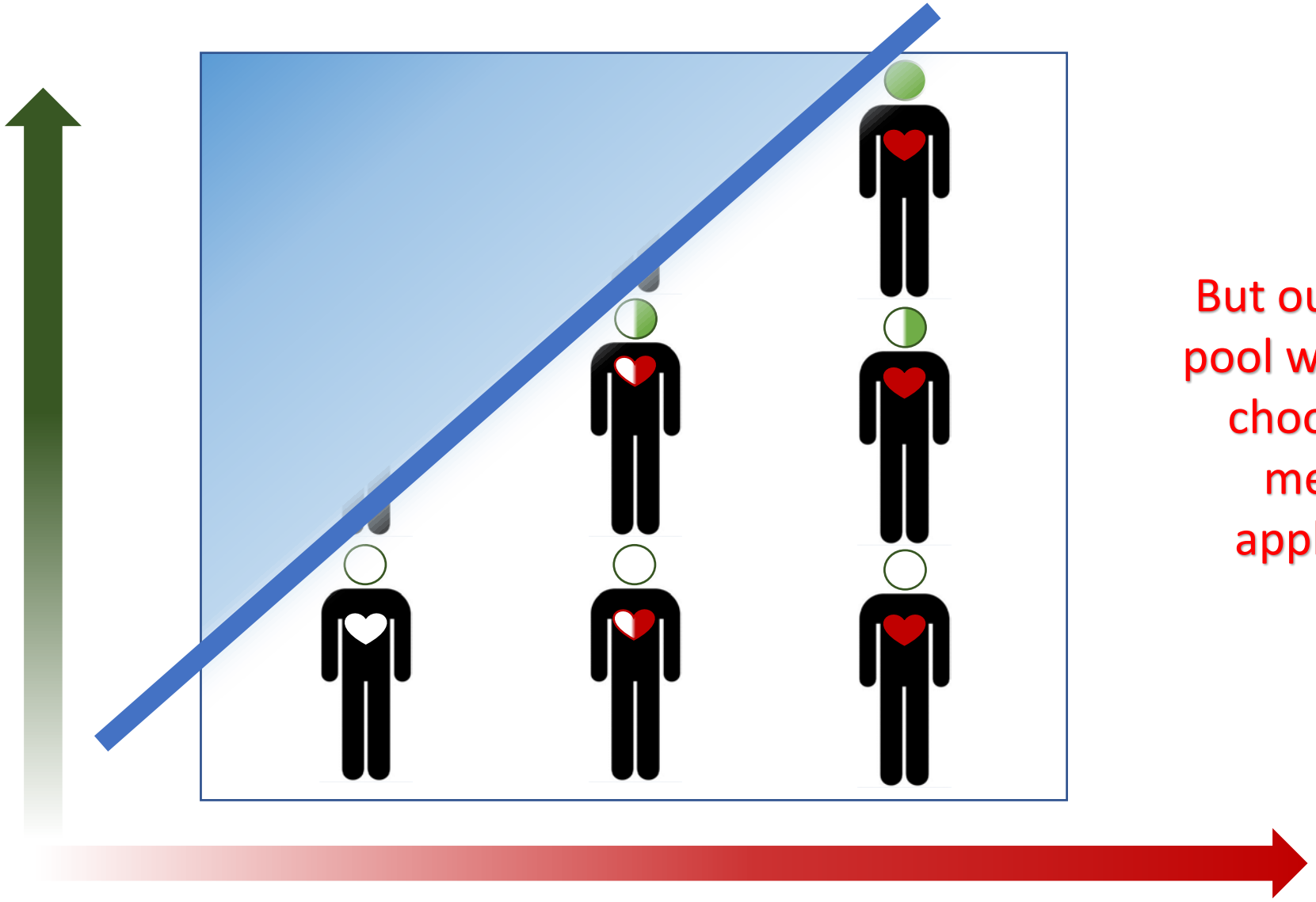


medium rewards


Material benefits
high
rewards

The median applicant in treatment is smarter and more selfish

	treatment		control
Cognitive skills (O-levels total exam score)			
random draw: median	24.9	>	23
random draw: 10th and 90th pctile	[24; 25.9]		[22.1; 23.9]
Cognitive skills (number of science O-levels)			
random draw: median	1.42	>	1.25
random draw: 10th and 90th pctile	[1.35;1.5]		[1.17;1.39]
Pro-sociality			
random draw: median	2.45	<	2.54
	[2.4;2.51]		[2.50;2.59]

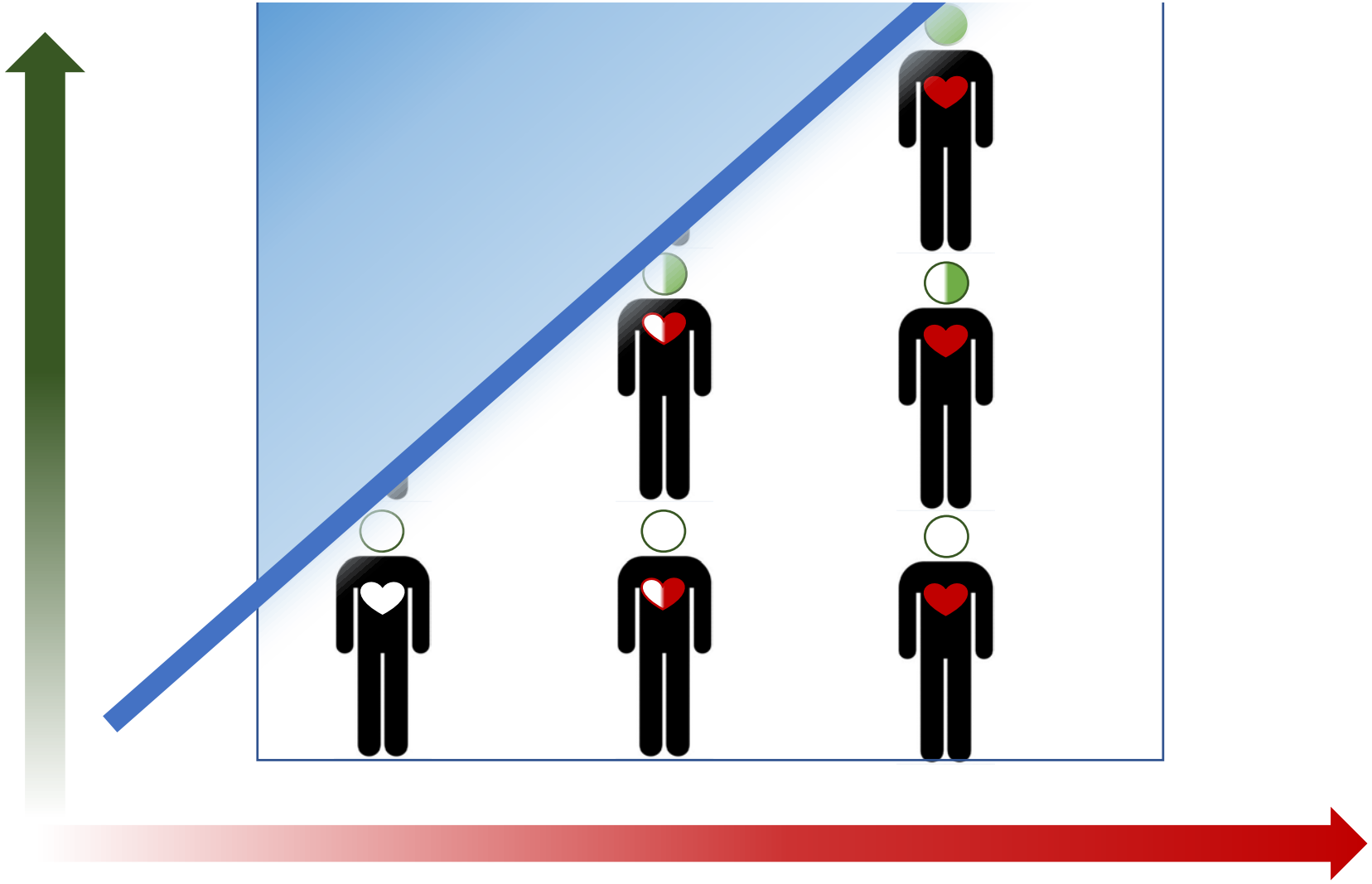


But out of this pool would you choose the median applicant?

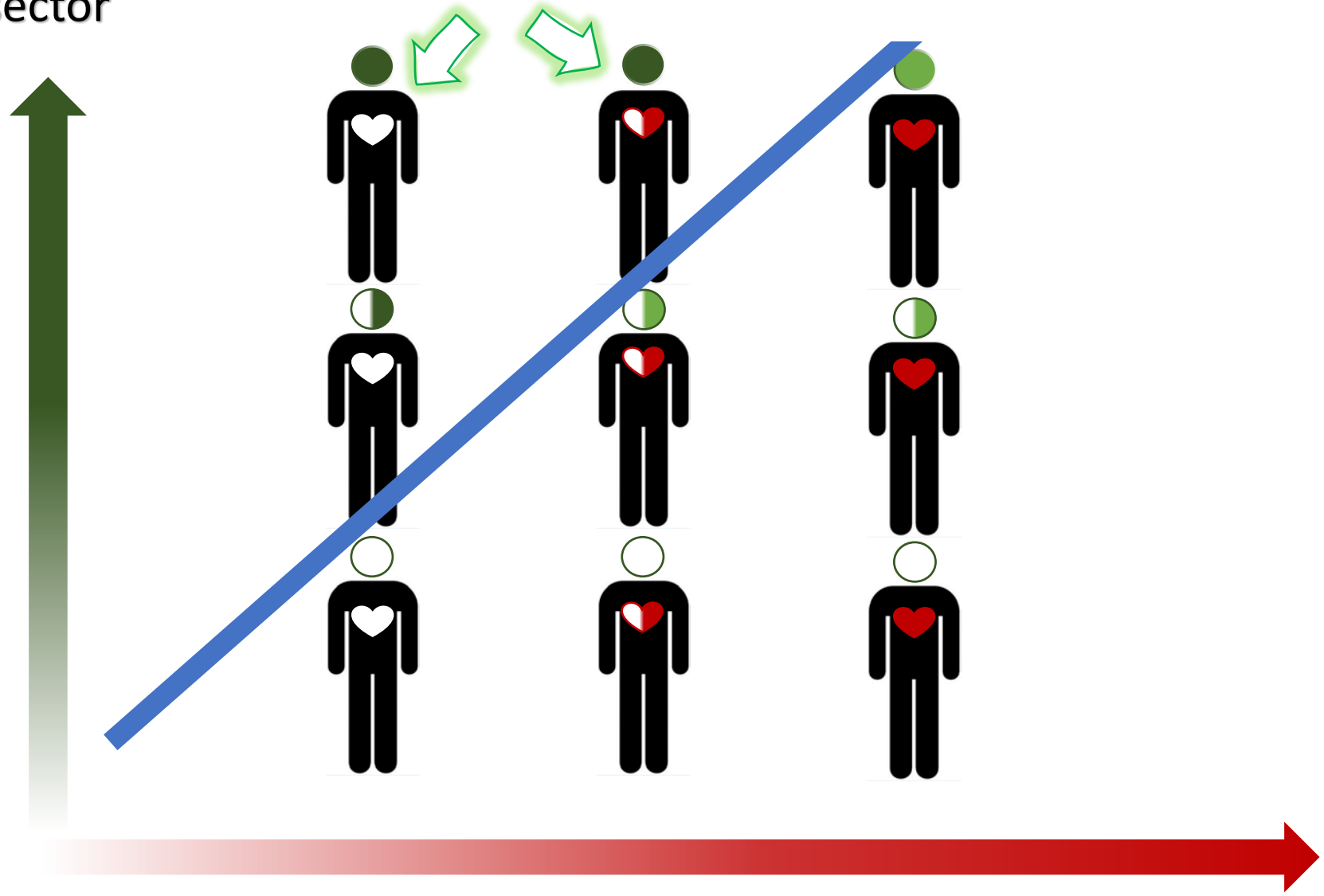
Selection panels chose the smartest, who were also the most pro-social

	treatment		control
Cognitive skills (O-levels total exam score)			
panel selection	27.2	>>	25.6
random draw: median	24.9		23
random draw: 10th and 90th pctile	[24; 25.9]		[22.1; 23.9]
Cognitive skills (number of science O-levels)			
panel selection	1.56	>>	1.47
random draw: median	1.42		1.25
random draw: 10th and 90th pctile	[1.35;1.5]		[1.17;1.39]
Pro-sociality			
panel selection	2.55	=	2.55
random draw: median	2.45		2.54
	[2.4;2.51]		[2.50;2.59]

This is a general result.. as long as the private sector rewards ability more, the most able applicant will always be the most prosocial



Because those with the same ability but lower prosociality will be better off in the private sector



stakes are high

more inputs

31% more visits

2X community meetings

more usage

30% more institutional deliveries

22% more vaccinations

better health

25% fewer malnourished

three lessons

- the allocation of authority and incentives must take into account agency problems at every level of the hierarchy
  - effects on one level depends on the other
  - might limit the portability of experimental findings
- social context matters
  - need to understand what drives people and how this interacts with material rewards
  - autonomy might be motivating on its own
- selection is key
  - need to understand how autonomy attracts different individuals