

Motivating Public Sector Workers

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The public sector and the economy

- ▶ Public sector provides several inputs to economic growth:
 - ▶ human capital (health and education)
 - ▶ physical capital (infrastructure, transport)
 - ▶ property rights and contract enforcement
- ▶ Effectiveness of these factors ultimately relies on the motivation and talent of the agents hired to deliver them – e.g. teachers, health workers, tax collectors, bureaucrats, etc.
- ▶ **How to increase motivation on the job and recruit talented workers to the job?**

Public Sector Productivity

- ▶ Measurement
 - ▶ Inputs
 - ▶ Outputs
 - ▶ Impact

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 - ▶ Inputs
 - ▶ Outputs
 - ▶ Impact
- ▶ Improvement
 - ▶ Increasing Productivity on the Job
 - ▶ Recruiting and selecting more Productive Workers
 - ▶ (creating a culture of productivity: non-monetary considerations)

A note on data and experimentation

- ▶ Any improvements in **administrative data** can have large payoffs in terms of research and practice
 - ▶ Facilitate research on productivity
 - ▶ Feedback to government managers for decision making and to employees for tracking progress

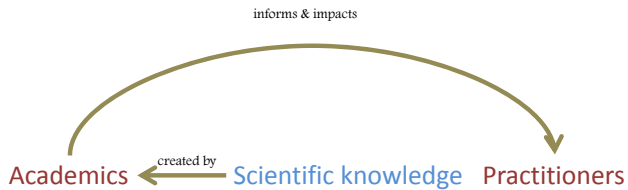
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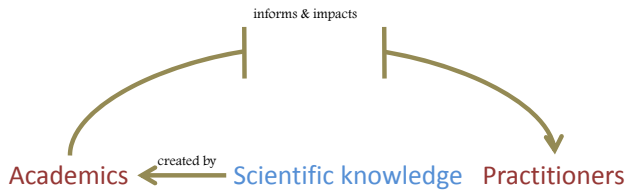
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 - ▶ Facilitate research on productivity
 - ▶ Feedback to government managers for decision making and to employees for tracking progress
- ▶ **Field experiments:** Researchers collaborate with governments/NGOs to create policy variation
 - ▶ “treatment” group gets the policy, “control” do not
 - ▶ e.g. randomly assign teachers to PP schemes
 - ▶ Variation is uncorrelated with other determinants of the outcomes of interest → identification of causal effects
 - ▶ Collaboration facilitates collection of rich data & builds capacity

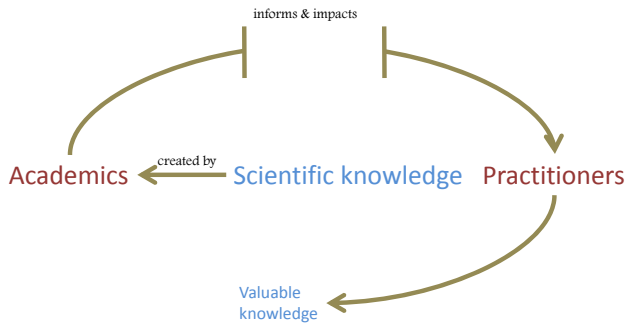
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 - ▶ Collaboration facilitates collection of rich data & builds capacity
- ▶ Best case scenario: allows for co-generation of knowledge

Academics ←^{created by} Scientific knowledge









Scientific knowledge

Academics

Practitioners

Scientific knowledge



Academics

Practitioners

Public Sector Productivity

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Standard Principal Agent Model

- ▶ A principal hires an agent to perform a task
- ▶ The success of the task depends on the agent's effort, which is costly to the agent and not observed by the principal
 - ▶ Eg: Government hires a teacher to teach, with objective of improving students' learning.

Agent's Choice

- ▶ Agents choose effort to maximise their utility
- ▶ This depends on (1) their preferences and (2) the incentive scheme they face

Preferences

- ▶ Standard model:
 - ▶ agents like money, dislike effort choose effort to equate the marginal benefit (of money) to the marginal cost (of effort)
 - ▶ Richer models allow agents to like:
 - ▶ status
 - ▶ friends
 - ▶ “a mission” (pro-social motivation)
 - ▶ competence: “a job well done”
 - ▶ autonomy
- ▶ But choice of effort is always dictated by $MB=MC$

Incentives

- ▶ Determine how agents' effort generates utility e.g. sales bonuses: more effort=higher reward
- ▶ Principal can design incentive schemes to align the interests of agents to his own, so that agent will choose the level of effort that maximises the utility of the principal
- ▶ In the standard model where agents only care about money, incentives take the form of **performance pay**
 - ▶ any form of reward (monetary bonus, promotion, recognition) tied to a performance measure (sales, test scores etc)

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- ▶ “Camera experiment”: rewarding teachers' attendance (verified by photo) reduces absenteeism (incentivised dimension) and improves students' test scores [Duflo et al 12]
- ▶ Rewarding teachers for students' test scores improves test scores and is more cost-effective than providing extra resources [Lavy 02, Muralidharan and Sundararaman 11]

Do performance rewards improve the agents' performance?

motivation crowding-out?

- ▶ In Ashraf et al (14) we test whether performance rewards crowd out the motivation of agents hired by an NGO to sell condoms in Lusaka
- ▶ We find that:
 - ▶ highly motivated agents sell more condoms
 - ▶ performance rewards *crowd in* intrinsic motivation

But...

- ▶ Agents can improve the incentivised measure only, not overall “performance” [Glewwe et al 10]
- ▶ Schemes that are too complex for agents to know how to get the rewards are ineffective [Fryer 13]
- ▶ Rewarding “box ticking” can reduce bureaucrats performance [Rasul & Rogger 14]
- ▶ Can be easy to manipulate measures [Banerjee et al 08]
- ▶ Incentives can convey information about the nature of the job and attract the “wrong” agents [Deserranno 15]

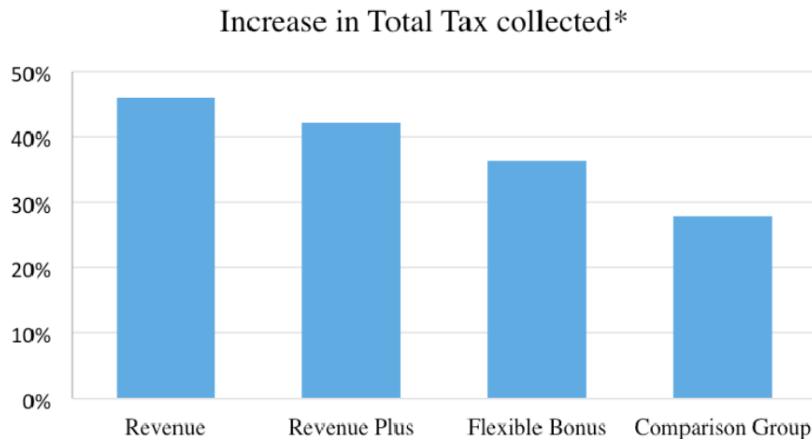
Pakistan Performance Pay Project

Khan, Khwaja & Olken (2016)

- ▶ RCT in collaboration with the Excise & Taxation Department in Punjab, Pakistan
- ▶ Focus on the local property tax in Punjab
- ▶ Randomly allocate tax officials to different pay for performance incentive schemes:
 - ▶ Revenue
 - ▶ Revenue PLUS (adjusts for accuracy and taxpayer satisfaction)
 - ▶ Flexible Bonus (wider set of criteria, subjective adjustments)
- ▶ Incentives increase revenue by 9.3 log points (increase growth rate by 46%)
- ▶ No change in taxpayer satisfaction or assessment accuracy

Treatment Effects on Total Tax Collected

Khan, Khwaja & Olken (2016)



Results

Khan, Khwaja & Olken (2016)

- ▶ Overall results mask more subtle differences between two types of taxpayers in treatment circles
 - ▶ For most: tax paid unchanged, and bribes increase
 - ▶ But, for some: tax paid increases substantially, and bribes fall
- ▶ Consistent with standard model of bargaining between tax payers and tax inspectors
 - ▶ Intuition: Performance pay increases “outside option” for tax collector in bargaining w/ taxpayer -> either bargaining break-down (more tax paid) or re-bargaining (bribes increase)
- ▶ Performance rewards can increase corruption by increasing the bargaining power of the agents vs. the citizens

Do performance rewards improve the agents' performance?

Assessment

- ▶ Performance rewards can be effective in cases where *performance measures are good*:
 - ▶ capture the effect of individual productivity
 - ▶ capture every relevant dimension of the job
 - ▶ can be easily affected by the individual
 - ▶ cannot be easily gamed

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- ▶ If not, they are ineffective or detrimental
- ▶ Where to from here?
 - ▶ focus on broader motivators: base salary, autonomy/decentralisation
 - ▶ focus on selecting the right people
 - ▶ “right”= talented? pro-social? is there a trade-off?

Do higher salaries improve performance?

- ▶ Why would they?
 - ▶ workers might fear losing the well-paid job if they underperform [Becker and Stigler 74]
 - ▶ workers might reciprocate the employer's generosity [Akerlof 82, Fehr and Gächter 00]
- ▶ Evidence from a natural experiment:
 - ▶ UK: lower real wages for hospital staff are associated with worse hospital performance [Propper and Van Reenen 10]
 - ▶ selection or effort?
 - ▶ Zambia [Ashraf, Bandiera and Jack, in progress]: 2013 salary reform throughout the civil service- large wage increases, significant wage compression, effects on education, health.

Does autonomy improve performance?

- ▶ Decentralisation debate: centralised rules restrict opportunistic behavior but also limit the use of the agents' private information
- ▶ Evidence points to the value of discretion:
 - ▶ inefficiency in procurement mostly driven by excessive rules [natural experiment using Italian data, Bandiera et al 09]
 - ▶ public organisations that give bureaucrats more discretion have higher project completion rates [survey evidence from Nigeria, Rasul and Rogger 14]
 - ▶ giving discretion to environmental inspectors improves targeting and results in the same reduction in pollution at a lower cost [field experiment in Gujarat, Duflo et al 14]

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 - ▶ Talent: ability/skills; ambition; drive
 - ▶ Pro-sociality and connection to the community
- ▶ Particularly important for incentivizing effective services delivery to remote areas
 - ▶ Policy debate on upskilling and professionalizing community-based agents
 - ▶ Potential tension between the dimensions of effectiveness—> policy argument that material rewards should remain low to attract the most dedicated community agents

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- ▶ In Ashraf et al (2014) we run a nationwide field experiment in collaboration with GoZ in the context of their new Community Health Assistant (CHA) program
- ▶ Cadre meant to address shortages in rural areas by formalising community health workers position
 - ▶ work in remote areas, challenges in monitoring and performance measurement rule out performance related pay
- ▶ Career advancement (salary progression) within the civil service can, but does not have to, be used as incentive
 - ▶ *“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)

Experimental design

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- ▶ Key challenge: isolate sorting effects from incentives on the job
- ▶ New cadre, job attributes unknown to potential applicants→our strategy:
 - ▶ vary the salience of career incentives when recruiting agents
[opens selection channel]
 - ▶ provide the same actual incentives to all agents once hired
[closes motivation channel].
- ▶ Randomise 2 recruitment posters across 48 districts

Recruitment posters

REPUBLIC OF ZAMBIA MINISTRY OF HEALTH



| DESIGNATED HEALTH CENTRE: | FOR POSTING AT: |
|---------------------------|-----------------|
| | |

TRAINING OPPORTUNITY

ONE-YEAR COURSE IN COMMUNITY HEALTH

The Ministry of Health of the Republic of Zambia is launching a new national Community Health Worker (CHW) strategy and invites applicants to participate in the inaugural training of community health workers.

The training will begin on **30th August 2010** and will be held at the Provincial level for selected applicants. All participation costs, including transportation, meals and accommodation will be covered by the Ministry of Health.

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.

Counseling and Support

Care and Treatment

Health Education

Want to serve your community? Become a CHW!

CLOSING DATE: 30th JULY 2010.
Only shortlisted candidates will be contacted for interview.

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- Interact with experts in medical fields
- Access future career opportunities including:
 - Clinical Officer
 - Nurse
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How to make ORS

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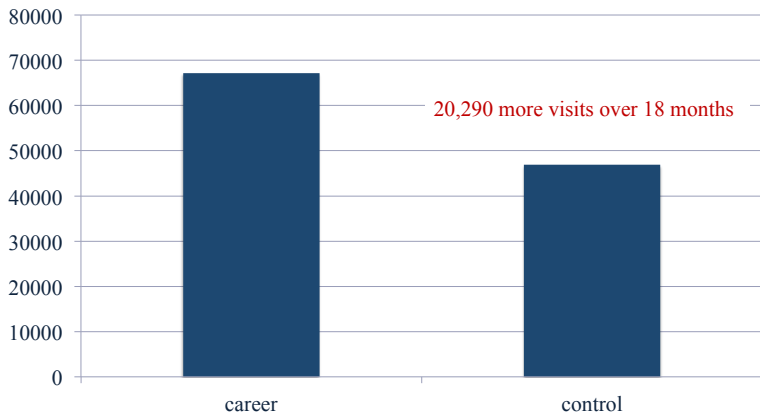
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Treatment and control districts are similar

- ▶ Same eligible population
 - ▶ 4% eligible, of which 13% unemployed, 8% housework, 30% self-employed (mostly farming), 34% employees
- ▶ Same area characteristics
 - ▶ 1.5 staff at health post, low density
- ▶ Same target population
 - ▶ education, wealth, access to safe water and sanitation

Career incentives attract agents who do 31% more visits



Source: SMS receipts sent by CHAs

Do control CHAs outperform on other dimensions?

- ▶ Do more community mobilisation/work at HP?
- ▶ Remain in post longer?
- ▶ Focus on hard-to-reach households?
- ▶ Longer visits?
- ▶ Better targeting within households?
- ▶ Work longer hours doing something else?
- ▶ More responsive to emergencies?

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Impact on facility utilisation

- ▶ Monthly HMIS data (facility level) show that in treatment areas:
 - ▶ institutional deliveries go up by 31%
 - ▶ children visits at HP go up by 24%
 - ▶ children weighted at HP go up by 22%
 - ▶ under 1yr-olds receiving polio vaccination go up by 20%

Impact on health outcomes

- ▶ HH survey data show that in treatment areas:
 - ▶ breastfeeding goes up by 8%
 - ▶ deworming goes up by 15%
 - ▶ children on track with immunisation go up by 81%
 - ▶ share of underweight children goes down by 25%

Summary

- ▶ First evidence of the impact of selection on public services delivery effectiveness
- ▶ Career incentives attract candidates who perform better and difference cannot be explained by observables
 - ▶ -> importance of incentive design at the recruitment stage
 - ▶ -> existing estimates might understate incentive effects
- ▶ Allay concern that offering material rewards for public service delivery displaces applicants with desirable preferences and worsens performance.
- ▶ Key issues for external validity:
 - ▶ Nature of job is full time service delivery
 - ▶ requirements designed to ensure close link to community
 - ▶ material benefits we offer might not attract selfish types

Welfare implications

- ▶ wage bill gains might compensate for performance losses (here all CHAs are paid the same) although sign of difference in reservation wages is ambiguous
- ▶ some career CHAs will eventually be promoted \rightarrow compare having a “good” CHA for X years vs. a “not so good” CHA for (potentially) $Y > X$ years
- ▶ depends on what “good” CHA would do after leaving their position, whom they replace, and who they are replaced by
- ▶ in this context personnel shortages at every level of the hierarchy and many potential applicants

The lessons so far and some speculation

- ▶ **Virtuous Cycles:** Find and harness underutilised talent in the delivery of public services: Health \leftrightarrow Human Capital
- ▶ Leveraging **Monetary vs Non-Monetary Motivation:**
 - ▶ Not the same tradeoff that is often assumed, but can make biggest impact by leveraging what is scarce in the environment: career opportunities vs social impact
- ▶ Possibility of creating organizational culture through selection and incentives?