

Pro-Social Motivation and the Design of Incentives: Field Experimental Evidence

Nava Ashraf and Oriana Bandiera

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Incentives for Public Service Delivery

- Theory (Akerlof and Kranton 05, Besley and Ghatak 05) and survey evidence suggest that:
 - individuals who sort into public service jobs have stronger **pro-social preferences**
 - these jobs tend to have low **material incentives**
- **Pro-social preferences** and **material incentives** both align agents' interests with the principal \Rightarrow alternative motivators
- But the association of pro-social preferences and low incentives does not tell us what are the optimal incentives to:
 - **motivate agents to perform better on the job**
 - **attract the "right" type of worker to the job**

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Motivating Agents in Pro-Social Tasks

Ashraf, Nava, Oriana Bandiera and B. Kelsey Jack. 2014. "No Margin, No Mission? A Field Experiment on Incentives for Public Service Delivery." *Journal of Public Economics*.

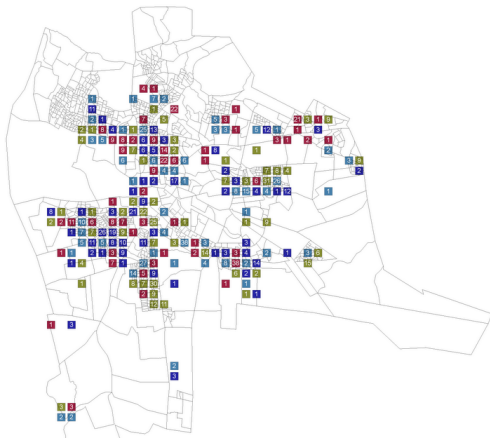
No Margin, No Mission?

- Design and implement a field experiment with SFH Zambia, a public health organization, to use hairdressers and barbers to sell subsidized female condoms and promote HIV prevention.
- ① Census: Survey all salons in Lusaka (~2500)
 - ① Randomly assign 1200 salons to four treatments

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Randomization



- Design and implement a field experiment with SFH Zambia, a public health organization
 - 1 Census: Survey all salons in Lusaka (~2500)
 - 2 Randomly assign 1200 salons to four treatments
 - 3 Invite to training:
 - Training on HIV prevention and health information, female condom promotion & marketing, business skills
 - Collect further information + experimental game to measure pro-social motivation

Field experiment design

- Design and implement a field experiment with SFH Zambia, a public health organization
 - 1 Census: Survey all salons in Lusaka (~2500)
 - 2 Randomly assign 1200 salons to four treatments
 - 3 Invite to training, learn about incentives, buy their first (subsidized) dispenser
 - 4 Sales and monitoring: collect monthly data on hairdressers for one year

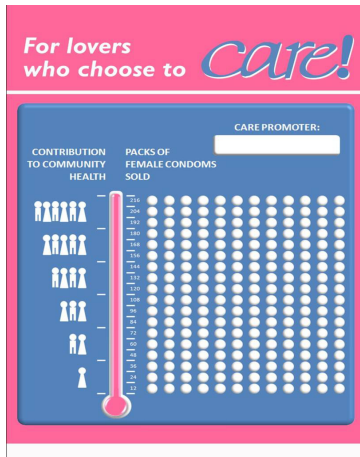


Field experiment design

All stylists sell at same price (K500/pack) , restock product from SFH, each dispenser contains 12 packets of 2 condoms each, incentives calculated monthly for number of dispensers sold

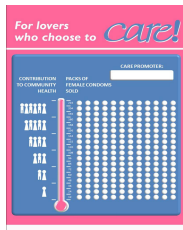
Pure volunteer treatment (PVT)	No incentive
Low powered financial treatment (LPFT)	K50/pack (10 percent of sales price)
High powered financial treatment (HPFT)	K450/pack (90 percent of sales price)
Status treatment (ST)	Sales chart to be filled with stars – after a threshold, public ceremony

Non-Financial rewards



Tie reward (stars) to sales effort (# of stars proportional to social value)

Non-financial rewards

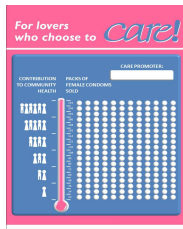


Tie reward (stars) to sales effort (# stars proportional to social value)

Can affect non-monetary payoff in a variety of ways:

- Warm glow (remind self)
- Reputation (make contribution visible)
- Relative status concern (allow social comparison with other promoters)

Non-financial rewards

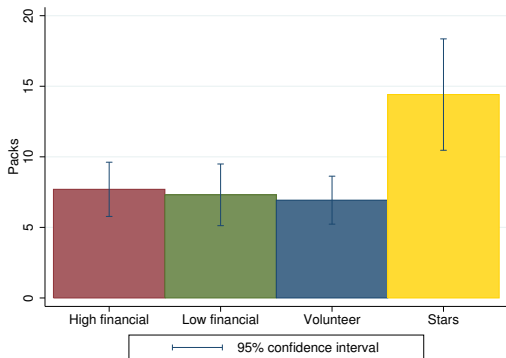


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The effect of incentives on sales



- Agents in the star treatment sell twice as many packs
- Robust to controlling for stylists, salons, and area characteristics

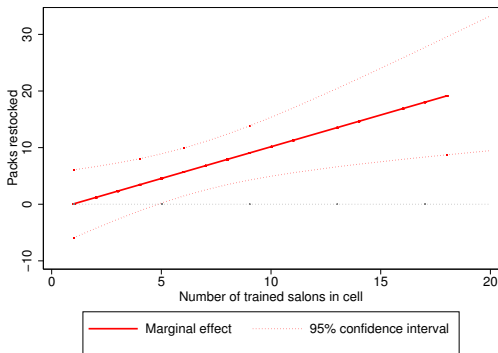
Mechanisms: crowding in vs. crowding out

- Pro-Social Motivation measure correlated with sales
- Stars more effective than any personal characteristics - e.g. motivation or sale experience
- *Stars leverage pro-social motivation but financial incentives do not crowd it out*

Mechanisms: social comparisons

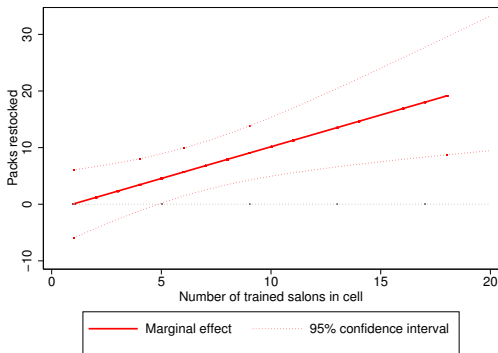
- Star rewards allow performance comparisons between agents
- The effect of stars is larger when there are more agents in the comparison group

Evidence: Social comparison



- The effect of stars is larger when there are more promoters in the same cell
- Other treatments (not shown) are equally ineffective

Evidence: Social comparison



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- Other treatments (not shown) are equally ineffective

- A part-time activity
- ① main occupation is different
- ② even high financial margins are tiny (1/7th of the price of a haircut)
- ③ many ways to make additional “dollar”; far less ways to make social impact.

Effect of Incentives on Selection

“Do-gooders and go-getters”, Ashraf, Bandiera, and Lee 2015

Health services provision in SSA

- Staff shortages, especially in rural areas, limit service delivery
- Informal community health workers often fill the gap; recruited locally with orientation towards serving the community
- CHA cadre meant to formalise and professionalize these positions
 - CHAs' main task is to visit households
 - CHAs work in remote areas, challenges in monitoring and performance measurement rule out performance related pay
- Career advancement within the civil service can, but does not have to, be used as incentive

Effect of Incentives on Selection

“Do-gooders and go-getters”, Ashraf, Bandiera, and Lee 2015

- Test how **private (career) incentives** affect **performance** *through sorting* into public health jobs
 - Nationwide field experiment with the government of Zambia in their new Community Health Assistant (CHA) program
 - Potential trade-off between skills and pro-social preferences
- Key challenge: isolate sorting effects
- New cadre, job attributes unknown to potential applicants → **identification strategy**:
 - vary the salience of career incentives when recruiting agents [*opens selection channel*]
 - provide the same actual incentives to all agents once hired [*shuts down direct motivation channel*].
- Study the effect on performance of these agents over the next two years and health impact of agent performance

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- First phase of CHA program: recruit 2 CHAs from 165 communities in 47 districts
- Experimentally vary the *salience of career benefits* by means of different recruitment posters at the district level
 - **control**: highlight **benefits to community** (status quo)
 - **treatment**: highlight **career benefits**
- All recruited CHAs are given the same information when **trained together** at the same location **for one year**.

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 "C" 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 "C" levels.
- Photocopy of Zambian national registration card.

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

CLOSING DATE: 30th JULY 2010.

Only shortlisted candidates will be contacted for interview.

Counseling and Support

Care and Treatment

Health Education

Want to serve your community? Become a CHW!

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- Access future career opportunities including:
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 - Nurse
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Environmental & Public Health

Clinical Medicine

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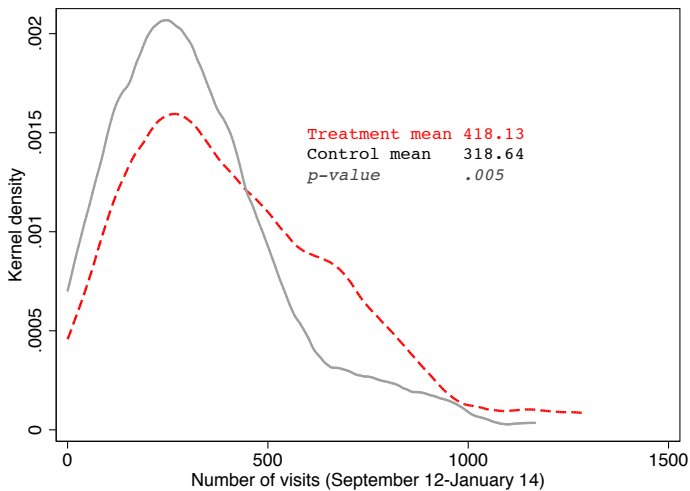
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Career incentives attract agents who do 31% more visits



Interpretation: Substitution between tasks?

Career incentives CHAs perform equally or better on all tasks

- organise twice as many community meetings
- see the same number of patients at HP

Do career CHAs underperform on other dimensions? No

- More likely to drop out? No
- Shorter visits? No
- Focus on easy-to-reach households? No
- Worse targeting within households? No
- Less responsive to emergencies? No
- Work shorter hours/devote less time to “informal” tasks? No

Health Impact: Institutional deliveries \uparrow by 30%, children visits by 24%, children weighted by 22%, polio vaccination \uparrow by 20%

Dependent variable: total over each quarter 2011:1-2014:2	institutional deliveries	postnatal (0-6 weeks) visits	children under 5 visited	children under 5 weighed	children under 1 receiving BCG vaccinations	children under 1 receiving polio vaccinations	children under 1 receiving measles vaccinations	average standardized effect
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Career incentives	0.134 (10.37)	-12.75 (9.435)	-65.96 (142.9)	-73.05 (133.5)	10.99 (11.97)	-0.374 (9.145)	1.707 (10.01)	-0.005 (0.156)
After	4.408 (4.253)	15.47*** (5.096)	61.71 (62.82)	108.7* (63.33)	-1.270 (4.540)	-1.177 (3.701)	-1.167 (3.553)	0.043 (0.059)
Career incentives*After	13.97** (6.242)	7.919 (9.467)	312.0*** (97.24)	277.9** (109.2)	7.147 (8.838)	14.65*** (4.802)	11.19 (7.229)	.277*** (0.092)
Area characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Mean of dependent variable in control in year 1	46.7	49.9	1312.8	1261.5	89.8	73.9	73.6	na
Adjusted R-squared	0.353	0.213	0.253	0.253	0.151	0.151	0.118	na
Number of facilities	89	118	123	123	121	120	121	na
Number of observations	1268	1529	1618	1610	1518	1530	1535	1097

note: no difference between treatment and control areas before the program

- no differential trends before the program
- not driven by time-invariant facility unobservables correlated with treatment (FE specification)

Health Impacts: Breastfeeding \uparrow by 8%, child on track with imm. \uparrow by 81%

Dependent variable	Information	Health practices			
	% of correct answers in medical knowledge test	=1 if child under 2 yr old is breastfed	=1 if child's stool are safely disposed	number of deworming treatments	=1 if child exposed to CHA is on track with immunization schedule
Career incentives	0.002 (0.010)	0.051** (0.023)	0.121*** (0.039)	0.225* (0.129)	0.047** (0.020)
household controls	yes	yes	yes	yes	yes
child controls	no	yes	yes	yes	yes
Mean of dep var in control	.740	.641	.595	1.44	.058
Adjusted R-squared	0.057	0.561	0.161	0.263	0.024
N	738	613	736	659	462

Moderate/severe undernourishment ↓ by 25%

Anthropometrics				
Dependent variable	=1 if weight for age z score <2 SD (moderately or severely undernourished)	=1 if weight for age z score <3 SD (severely undernourished)	=1 if MUAC<12.5 (moderately or severely wasted)	=1 if MUAC<11. 5 (severely wasted)
Career incentives	-0.053* (0.030)	-0.028* (0.015)	-0.023 (0.015)	-0.014 (0.014)
household controls	yes	yes	yes	yes
child controls	yes	yes	yes	yes
Mean of dep var in control	.210	.051	.036	.014
Adjusted R-squared	-0.006	0.003	0.018	0.017
N	582	582	581	581

Selection on observables or unobservables?

- Can eligibility criteria mimic the effect of carer incentives?
- Collect information on
 - ability
 - career preferences
 - pro-social preferences
 - demographics and SES

Treated CHAs have higher skills

	treatment	control	p-values
<i>Panel A: Skills</i>			
Average test score at training [0-100]	69.2 (7.23)	68.0 (6.75)	.067
O-levels total exam score	25.3 (9.92)	24.5 (8.70)	.559
O-levels passed in biology and other natural sciences	1.47 (.868)	1.39 (.824)	.801

- Test scores 18% of SD higher (same as Dal Bo et al (2013))

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Measuring social and career preferences

- Psychometric scales (Amabile et al 1994, Grant 2008, Wrzesniewski et al 97)
- Adapted dictator game: trainees given 25,000 Kwacha (\$5). Privately invited to donate any portion to local hospital.
- “Career or community” question

Treated CHAs have stronger career preferences, same *level* of social preferences

	treatment	control	p-values
<i>Panel B: Motivation and preferences</i>			
Psychometric scale: Career orientation [1-5]	3.30 (1.050)	3.08 (.939)	.025
Psychometric scale: Pro-social motivation	3.64 (.541)	3.63 (.541)	.623
Psychometric scale: Desire for positive pro-social impact [1-5]	4.43 (.444)	4.43 (.509)	.824
Psychometric scale: Affective commitment to beneficiaries [1-5]	3.81 (1.153)	3.83 (1.170)	.873
Donation to local hospital (dictator game)	4063 (4018)	3922 (3937)	.739
Main goal is "career advancement" vs. "service to community"	.138 (.346)	.055 (.228)	.015

- 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.

- incentives affect performance in public service delivery
 - on the intensive margin through effort choice
 - on the extensive margin through selection
- On neither margin do we find that financial/career rewards crowd out either pro-social motivation on the job, or pro-socially motivated people to the job.
- (Untested hypothesis) relative scarcity of private versus social rewards in environment could determine their effectiveness.

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The value of material vs social incentives in the private sector

- Making Salient Social Attributes of Private Sector Work
 - new experiments with major international bank, commercial banking arm (small and mid-market)
 - provide employees in Credit Approvals/Processes team with precise information on their social impact
 - medium-term impact of the loans they helped facilitates: jobs generated, export markets accessed, etc.
 - framed (possible x-randomized) with Bank Mission: *“We enable businesses to thrive and economies to prosper, helping people fulfill their hopes and dreams and realize their ambitions.”*
 - measure impact on individual and team productivity