Personalities and Public Sector Performance: Experimental Evidence from Pakistan

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- Asim Fayaz, World Bank/Technology for People Initiative
- International Growth Center (IGC)

Overview

- We report results from two experiments targeting health worker absence
- Focus on a *common* and *intractable* service delivery issue in Latin America, East Africa, and South Asia
  - ▸ Chaudhury, Hammer, Kremer, Muralidharan, and Rogers, 2006

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- **Question 3:** Do personality measures predict who will act on information?

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- Governments (the primary source of services for the poor) are composed of people
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  - Personality measures rival or exceed IQ in terms of predictive power in several domains (Heckman, 2011)
- Several possible benefits:
  1. Diagnostics and insights into bureaucratic decision-making
  2. Profile of applicants responds to adjustable features of the position (Dal Bó, Finan, Rossi, 2013)
  3. Traits are malleable, providing an avenue for policy (Almund, Duckworth, Heckman, Kautz, 2011)

This Project

1. **Experiment 1:** implement a smartphone monitoring system
2. **Experiment 2:** make absence data salient to senior health officials
3. **Measure Performance:**
   - doctor attendance
   - health inspections
   - collusion between inspectors and doctors
4. **Measure Personality Traits:**
   - A large, representative sample of doctors in Punjab
   - The universe of health inspectors in Punjab
   - The universe of senior health officials in Punjab

Preview of Findings

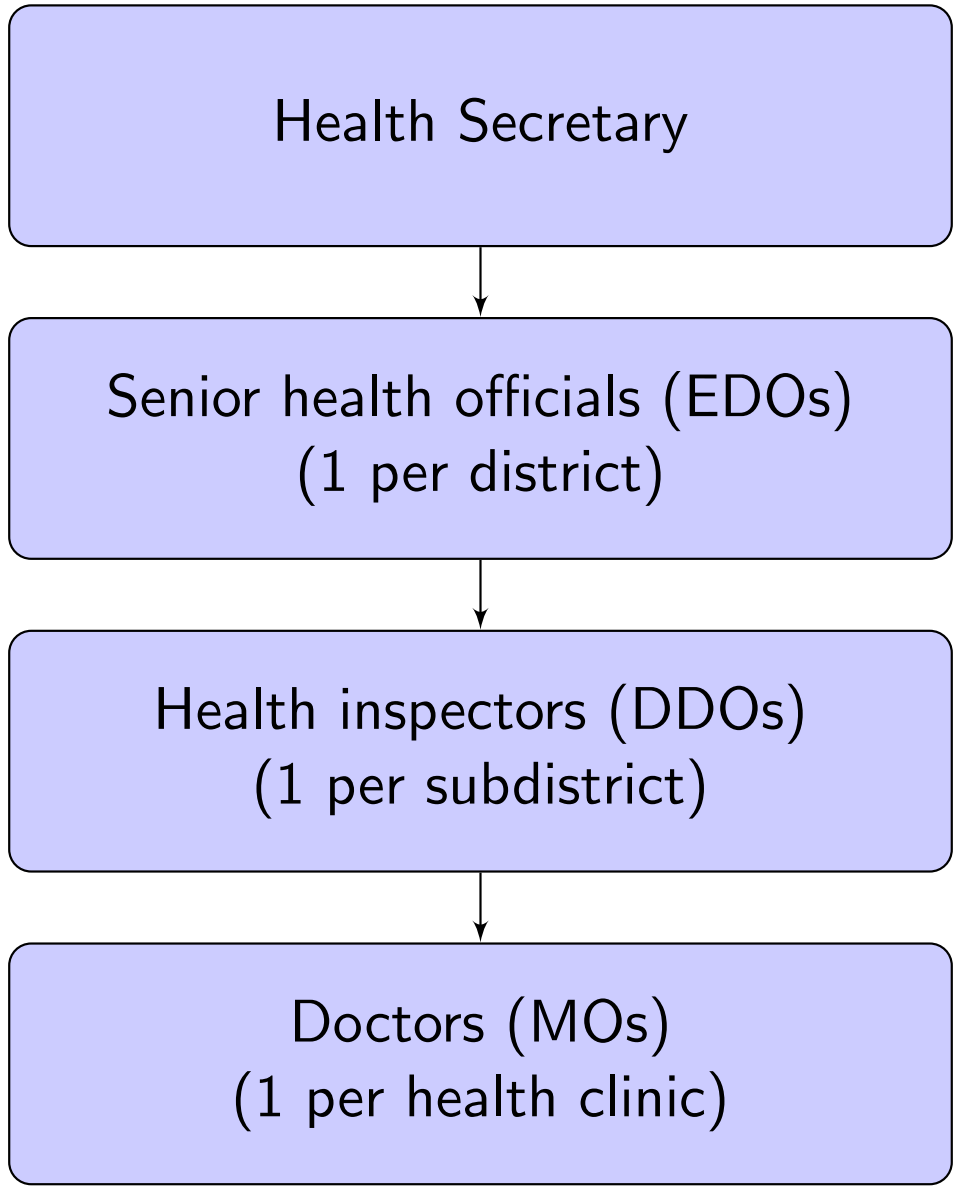
1. Personality traits (Big 5 and Public Sector Motivation) positively predict doctor attendance and negatively predict whether doctors collude with inspectors

2. Traits strongly predict responses to monitoring intervention
   - one SD increase in Big 5 is associated with 27 percentage point differential in attendance response

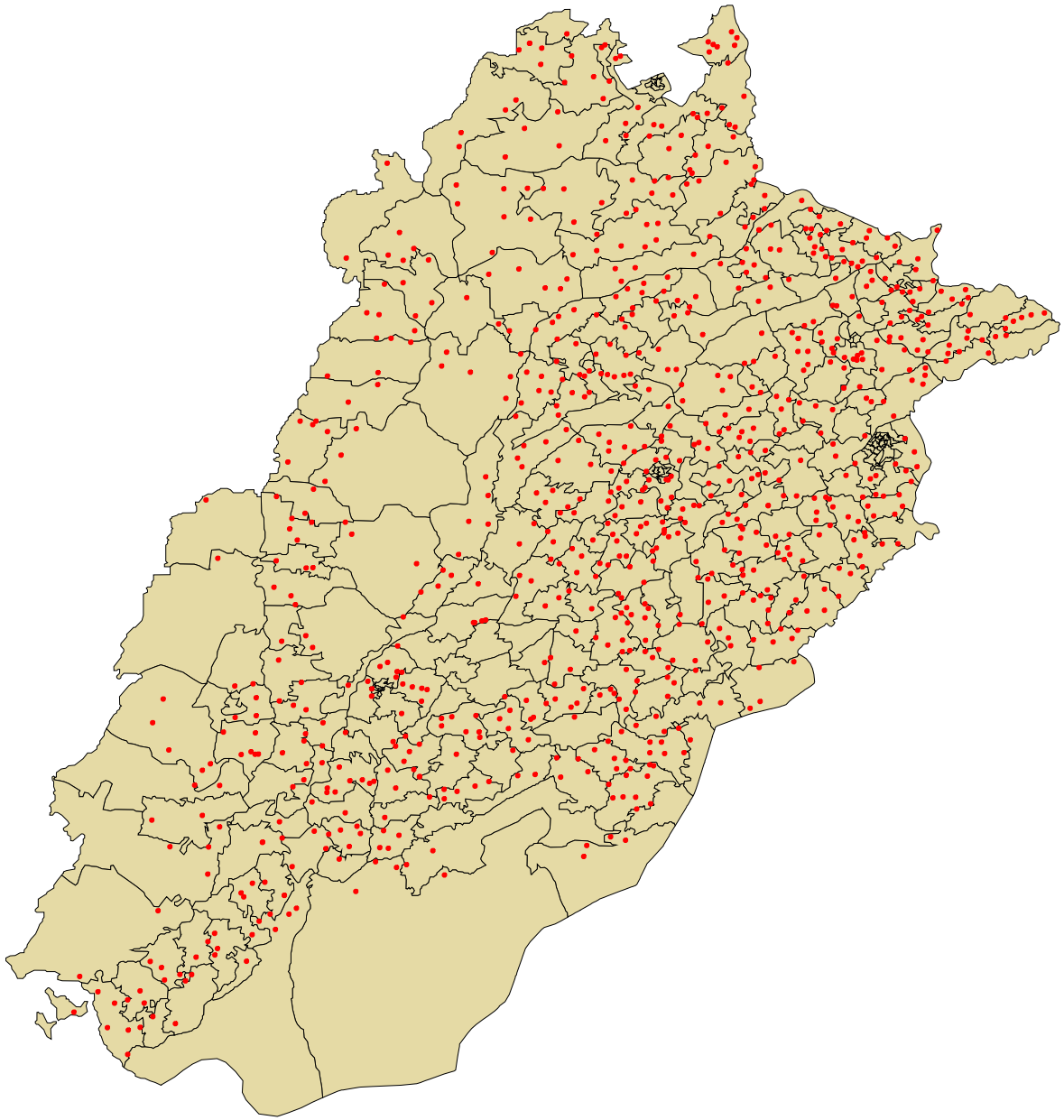
3. Personality traits strongly predict which senior officials act on reports of doctor absence
   - one SD increase in Big 5 is associated with an additional 40 percentage point reduction in doctor absence

Outline

Context: Punjab Department of Health

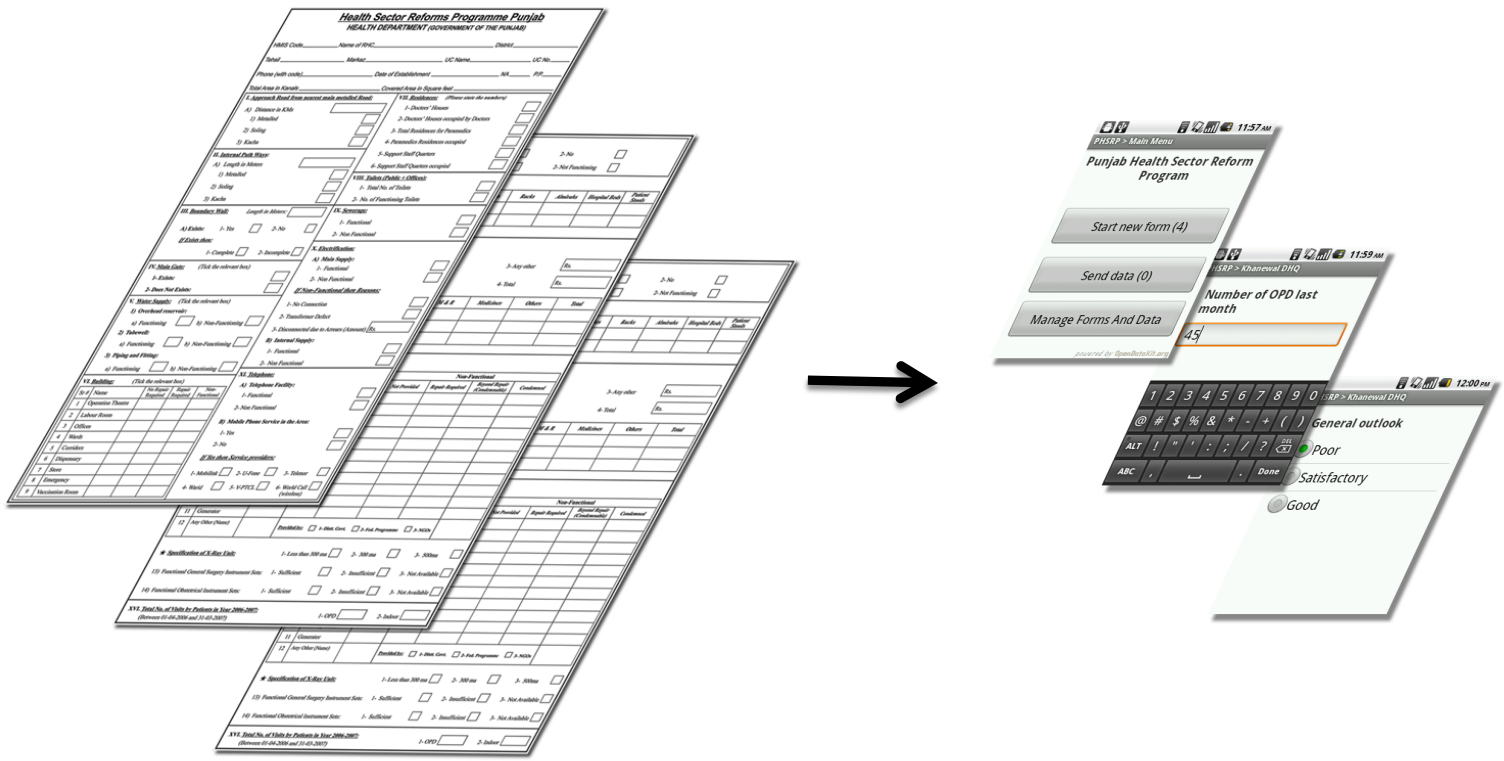


Rural Clinic Sample



Rural health clinics

Same data, new interface



Smartphones for health inspectors

Online dashboard—summary stats

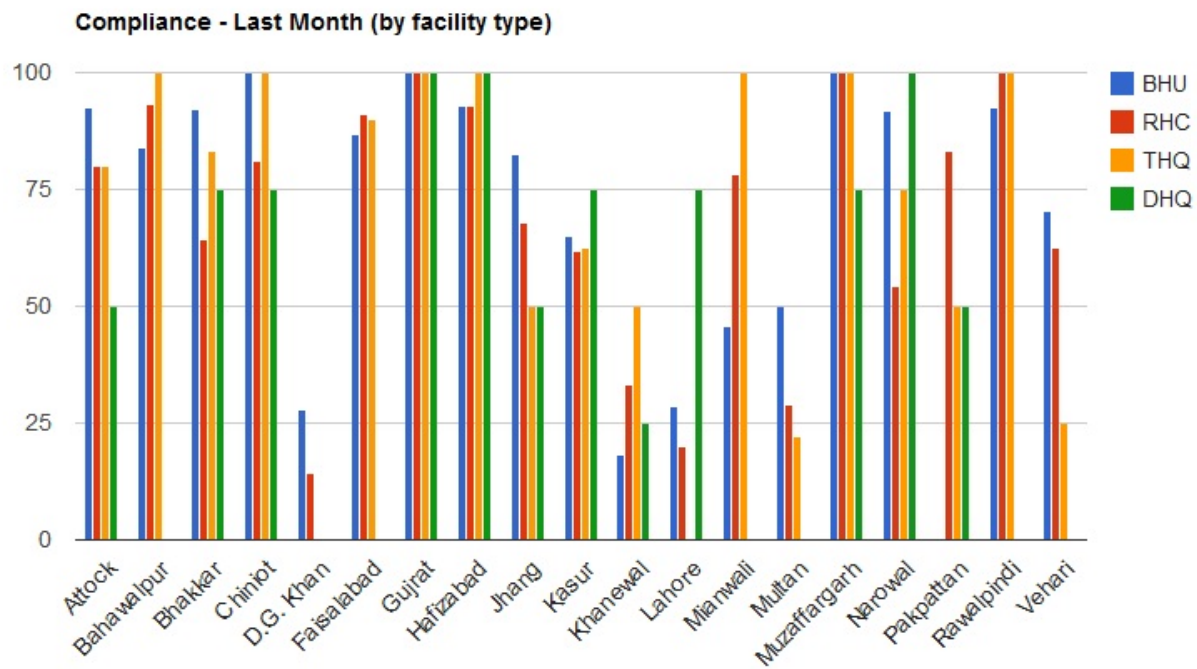
Health Department, Government of Punjab

Compliance Status | Facility Status | Recent Visits | Indicators | Time Trend Charts | Photo Verification | Map | Change Password | Logout

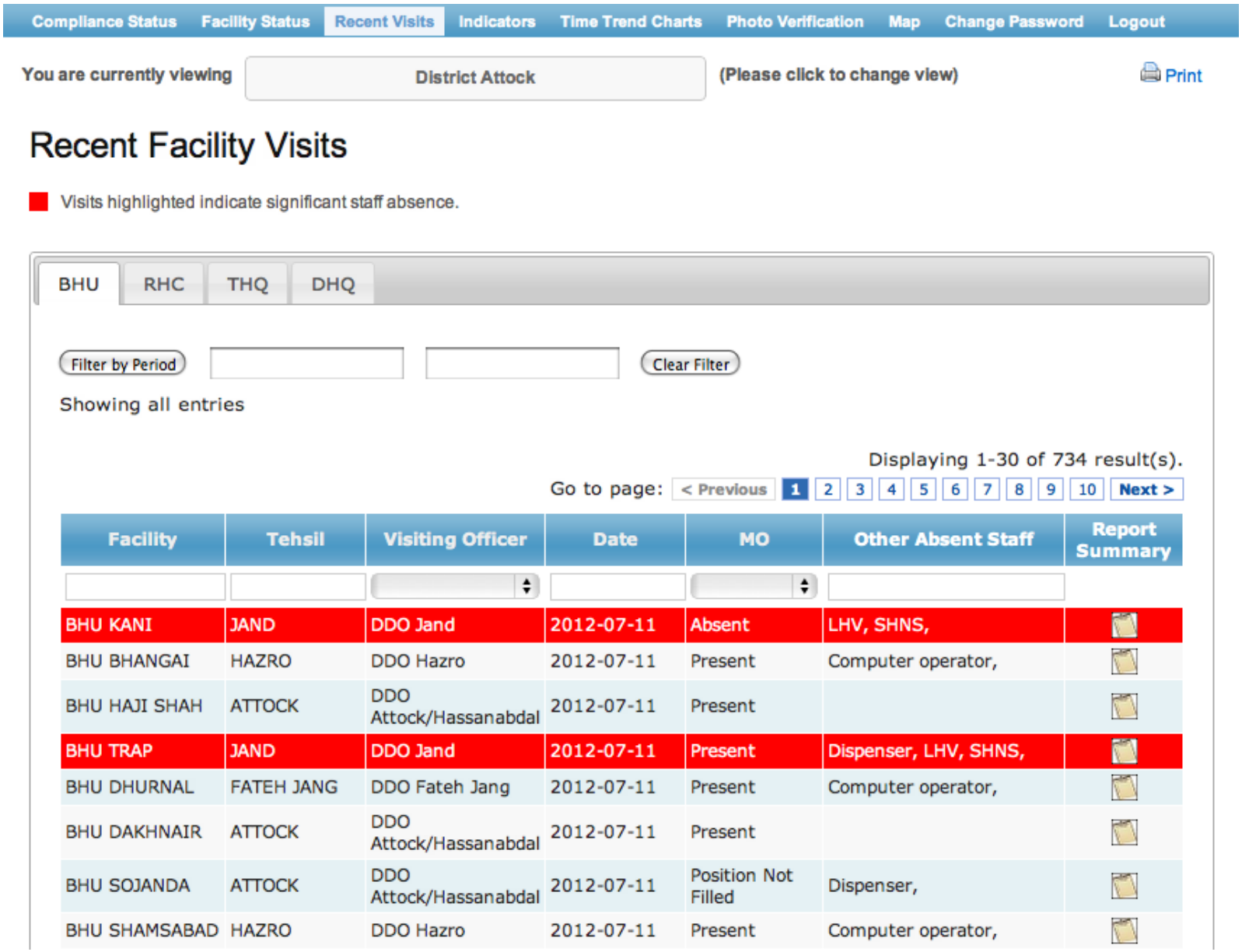
You are currently viewing PUNJAB (Please click to change view) Print

Officer Compliance Report

Officers are required to make the assigned number of visits to facilities in each calendar month. If the number of facilities is less than the assigned number of visits, the officer should repeat visits to some facilities to complete the quota of visits. View Detailed Report



Online dashboard—visit logs



Compliance Status | Facility Status | Recent Visits | Indicators | Time Trend Charts | Photo Verification | Map | Change Password | Logout

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Recent Facility Visits

Visits highlighted indicate significant staff absence.

BHU | RHC | THQ | DHQ

Filter by Period | Clear Filter

Showing all entries

Displaying 1-30 of 734 result(s).

Go to page: < Previous 1 2 3 4 5 6 7 8 9 10 Next >

Facility	Tehsil	Visiting Officer	Date	MO	Other Absent Staff	Report Summary
BHU KANI	JAND	DDO Jand	2012-07-11	Absent	LHV, SHNS,	
BHU BHANGAI	HAZRO	DDO Hazro	2012-07-11	Present	Computer operator,	
BHU HAJI SHAH	ATTOCK	DDO Attock/Hassanabdal	2012-07-11	Present		
BHU TRAP	JAND	DDO Jand	2012-07-11	Present	Dispenser, LHV, SHNS,	
BHU DHURNAL	FATEH JANG	DDO Fateh Jang	2012-07-11	Present	Computer operator,	
BHU DAKHNAIR	ATTOCK	DDO Attock/Hassanabdal	2012-07-11	Present		
BHU SOJANDA	ATTOCK	DDO Attock/Hassanabdal	2012-07-11	Position Not Filled	Dispenser,	
BHU SHAMSABAD	HAZRO	DDO Hazro	2012-07-11	Present	Computer operator,	

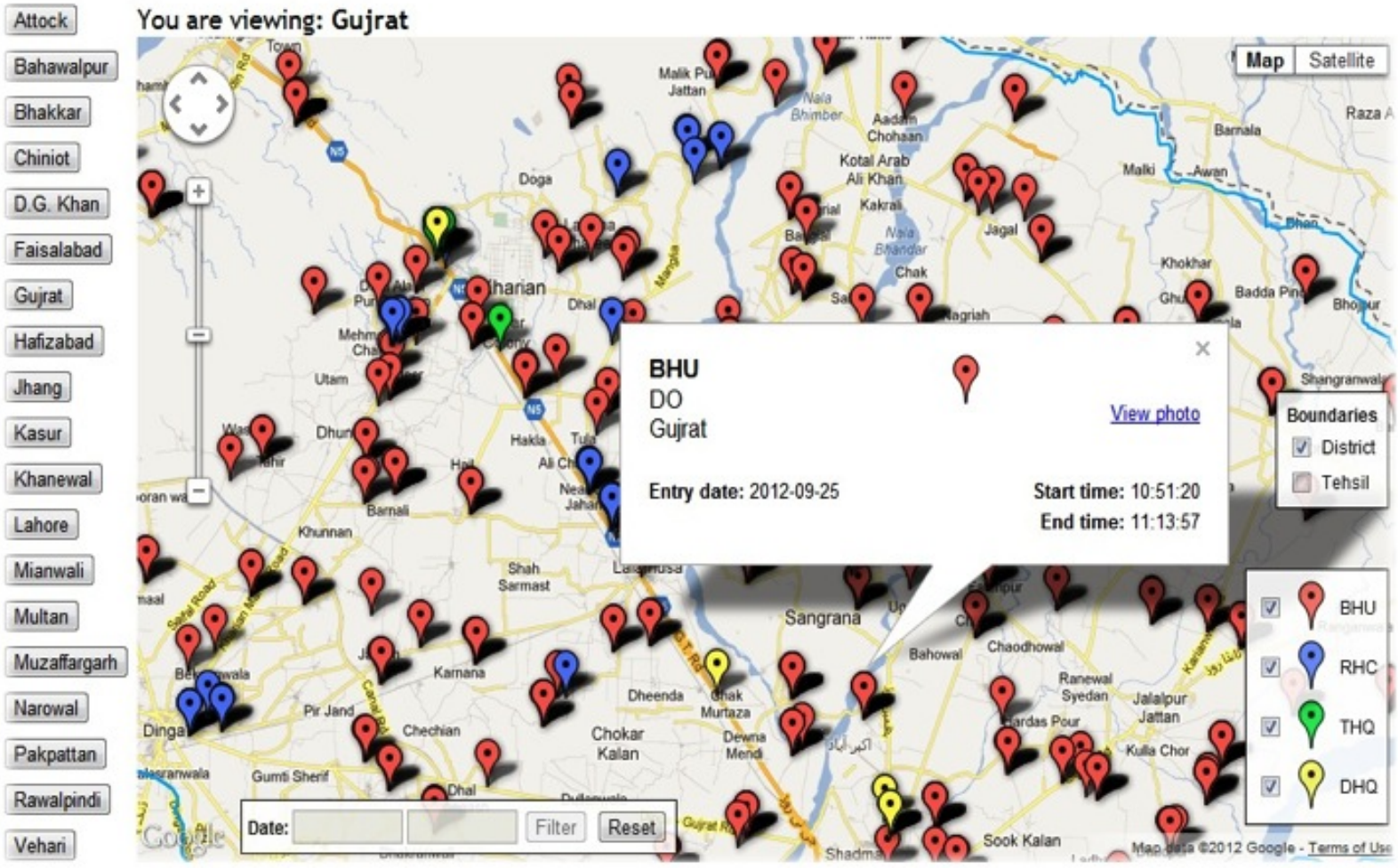
Potential workers or shirkers

Health Department, Government of the Punjab

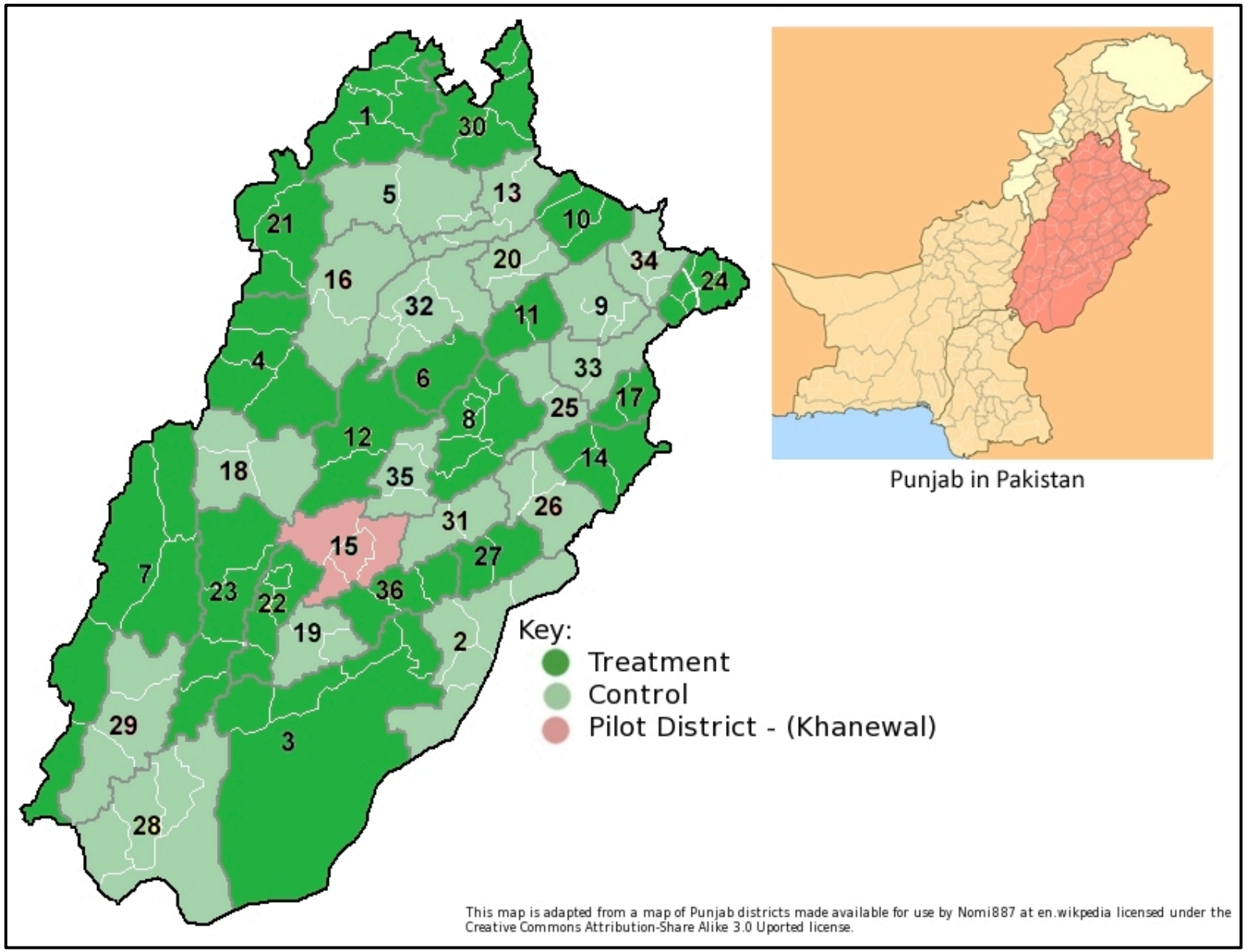
Smart monitoring and reporting

USING MOBILES TO IMPROVE MONITORING AND DATA COLLECTION

In collaboration with IGC, LUMS and Urban Unit



District-level randomization



Personality measures—Big 5 Personality Traits

- Five dimensions:
  1. openness
  2. conscientiousness
  3. extroversion
  4. agreeableness
  5. emotional stability

Personality measures—Big 5 Personality Traits

- Five dimensions:
  1. openness
  2. conscientiousness
  3. extroversion
  4. agreeableness
  5. emotional stability

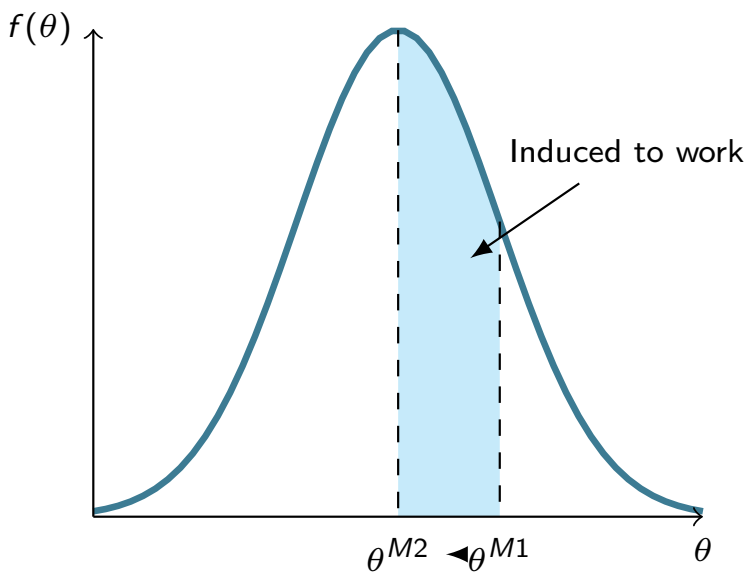
- Example statements:
  - I like to be amongst lots of people.
  - I don't want to waste time day-dreaming.
  - I try to be polite to everyone I meet.
  - I keep all my things clean and tidy.

Personality measures—Perry Public Service Motivation

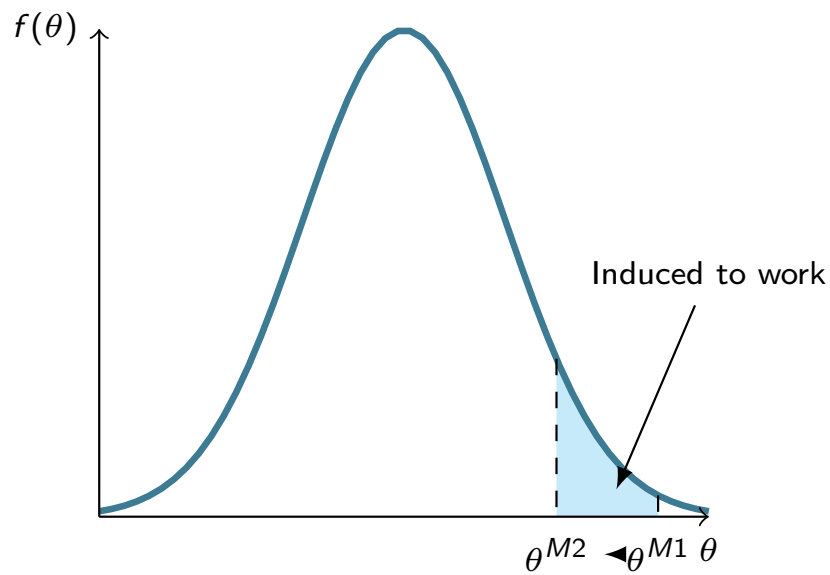
- Six dimensions:
  1. attraction to policymaking
  2. commitment to policymaking
  3. social justice
  4. civic duty
  5. compassion
  6. self-sacrifice

- Example statements:
  - Politics is a bad word.
  - The attitude of an elected official is just as important as his/her competency.
  - The words ‘work’, ‘honor’ and ‘country’ evoke strong emotions in the bottom of my heart.

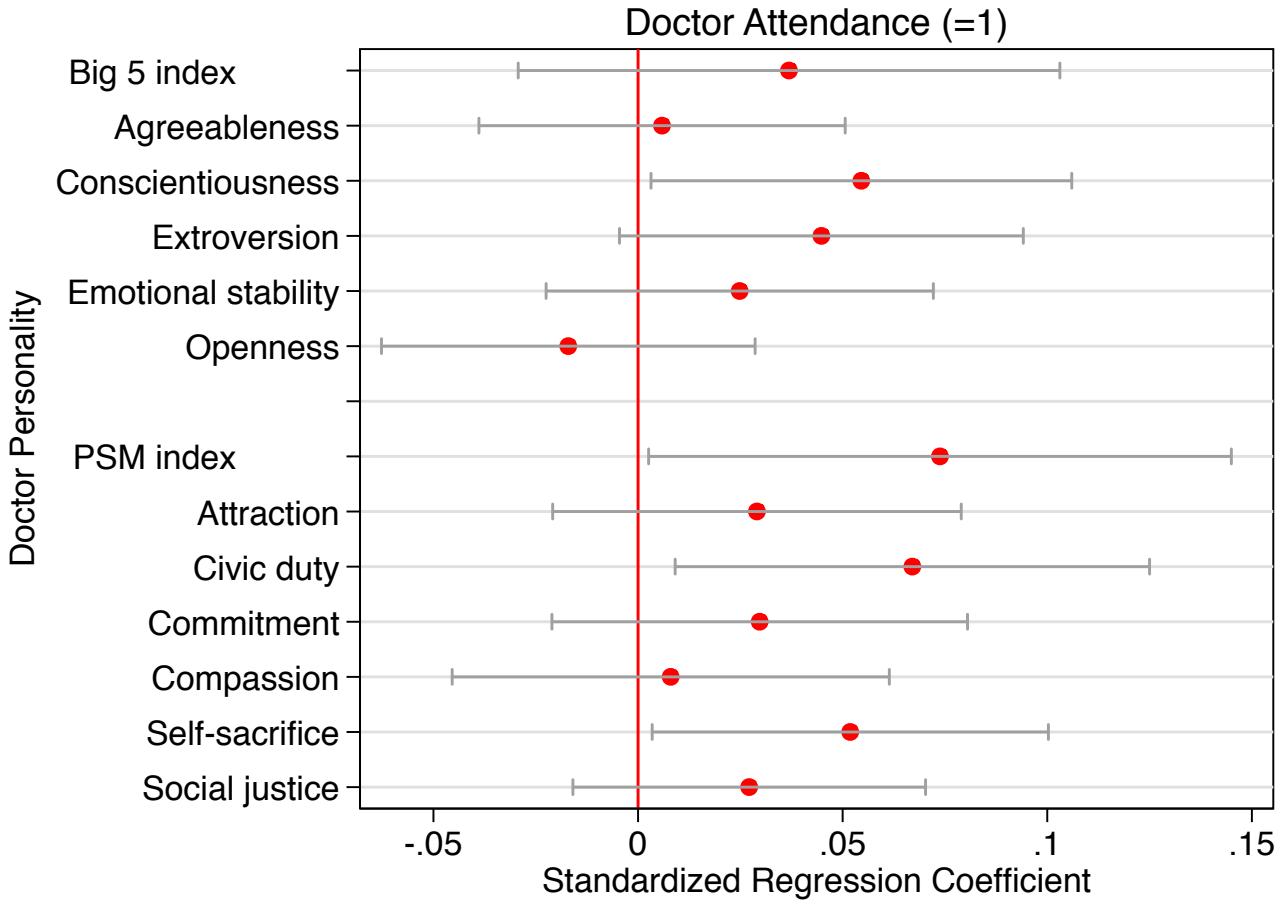
When will monitoring help?



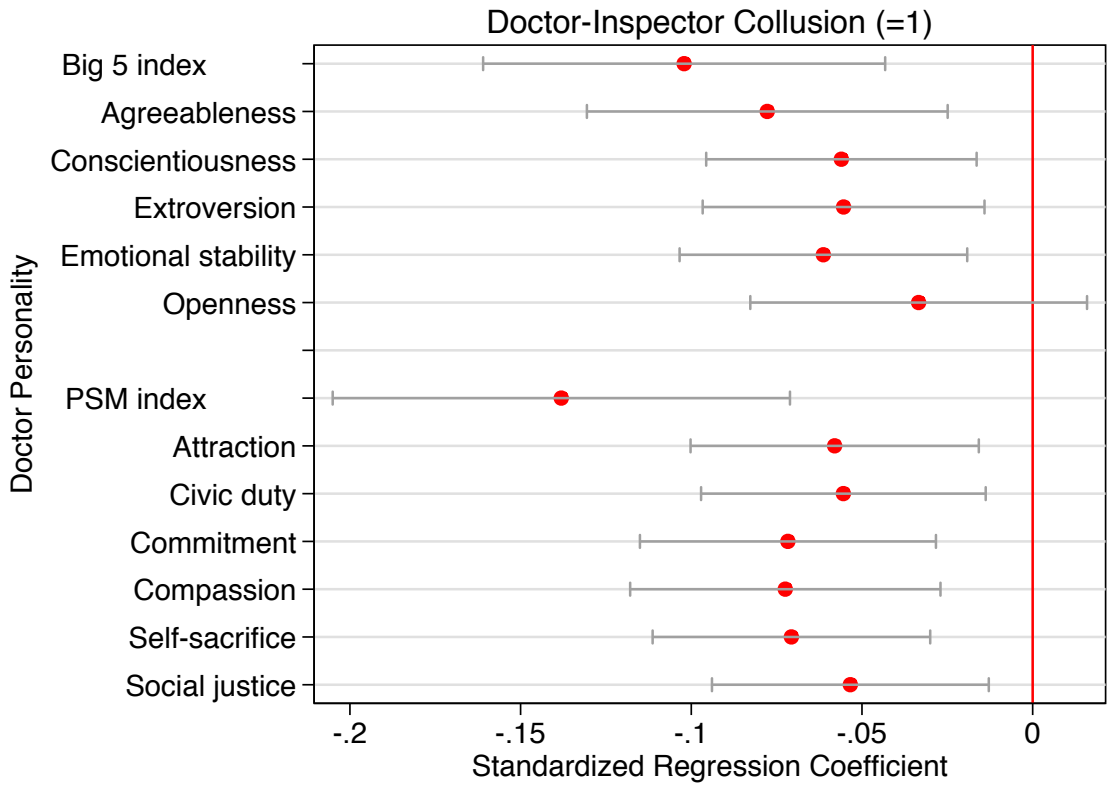
or



Doctor personality and doctor attendance



Doctor personality and doctor-inspector collusion



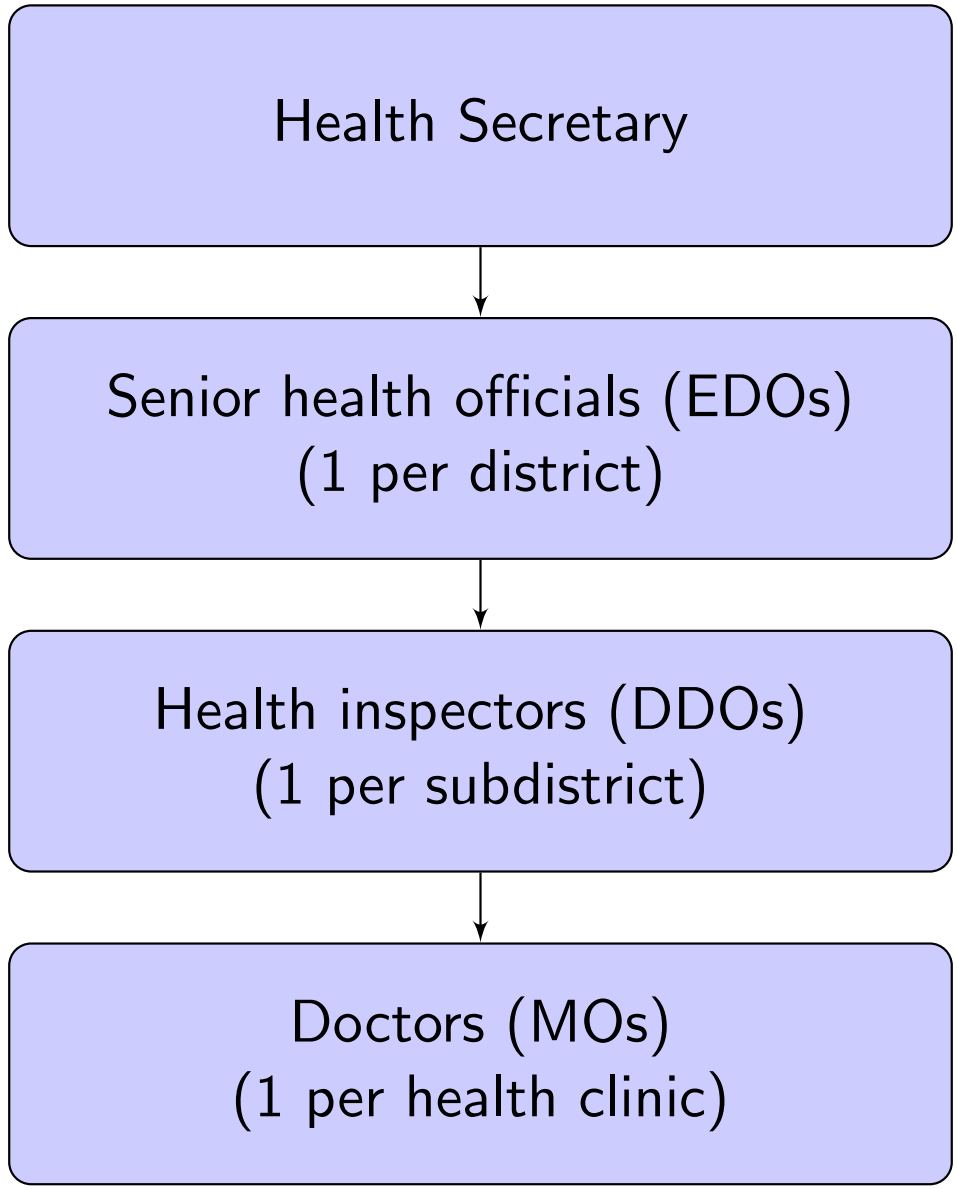
▸ Tables

These measures have more predictive power than:

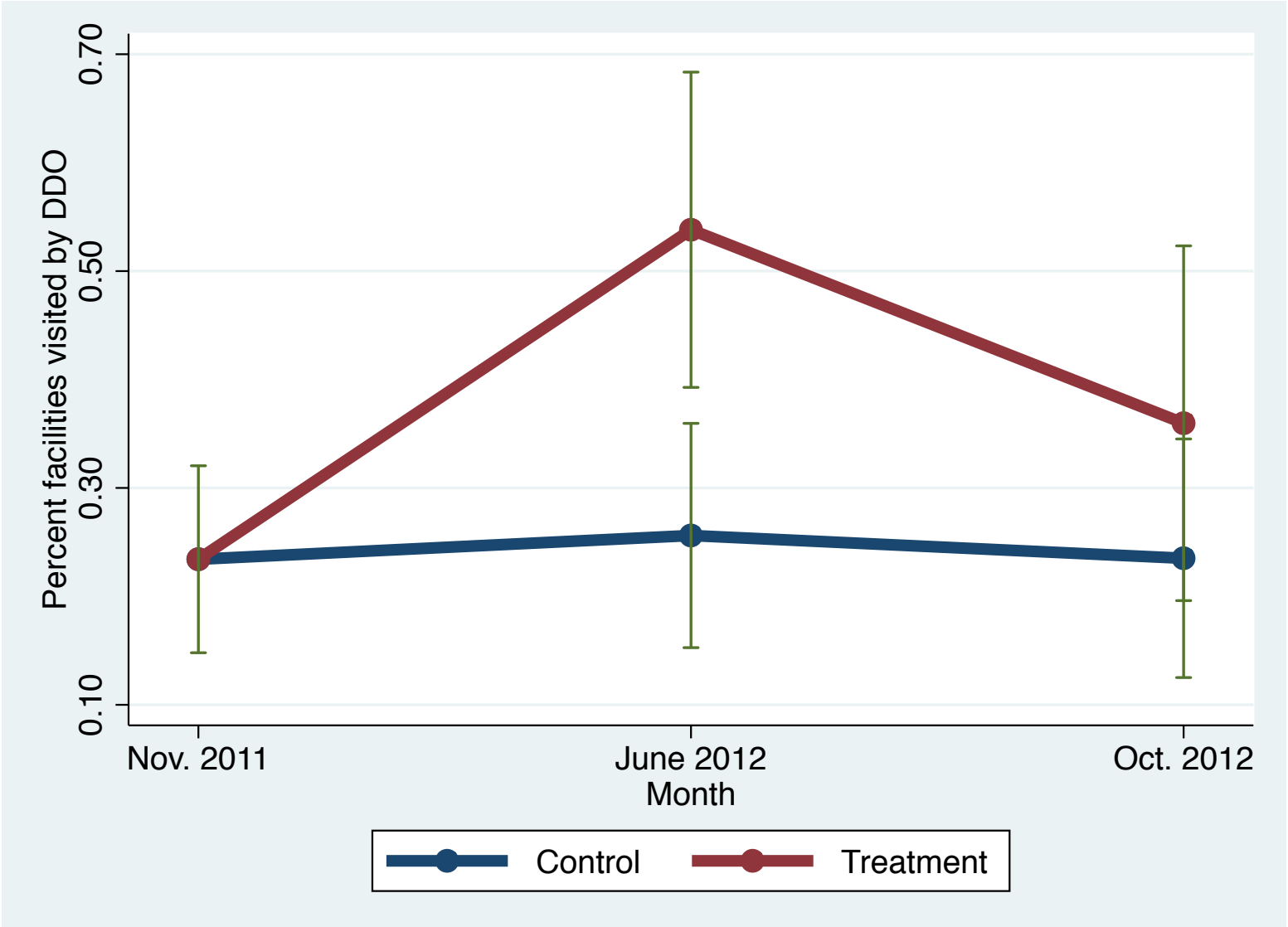
- Tenure in post
- Tenure in government
- Age
- Education
- other demographics

Results from Experiment 1

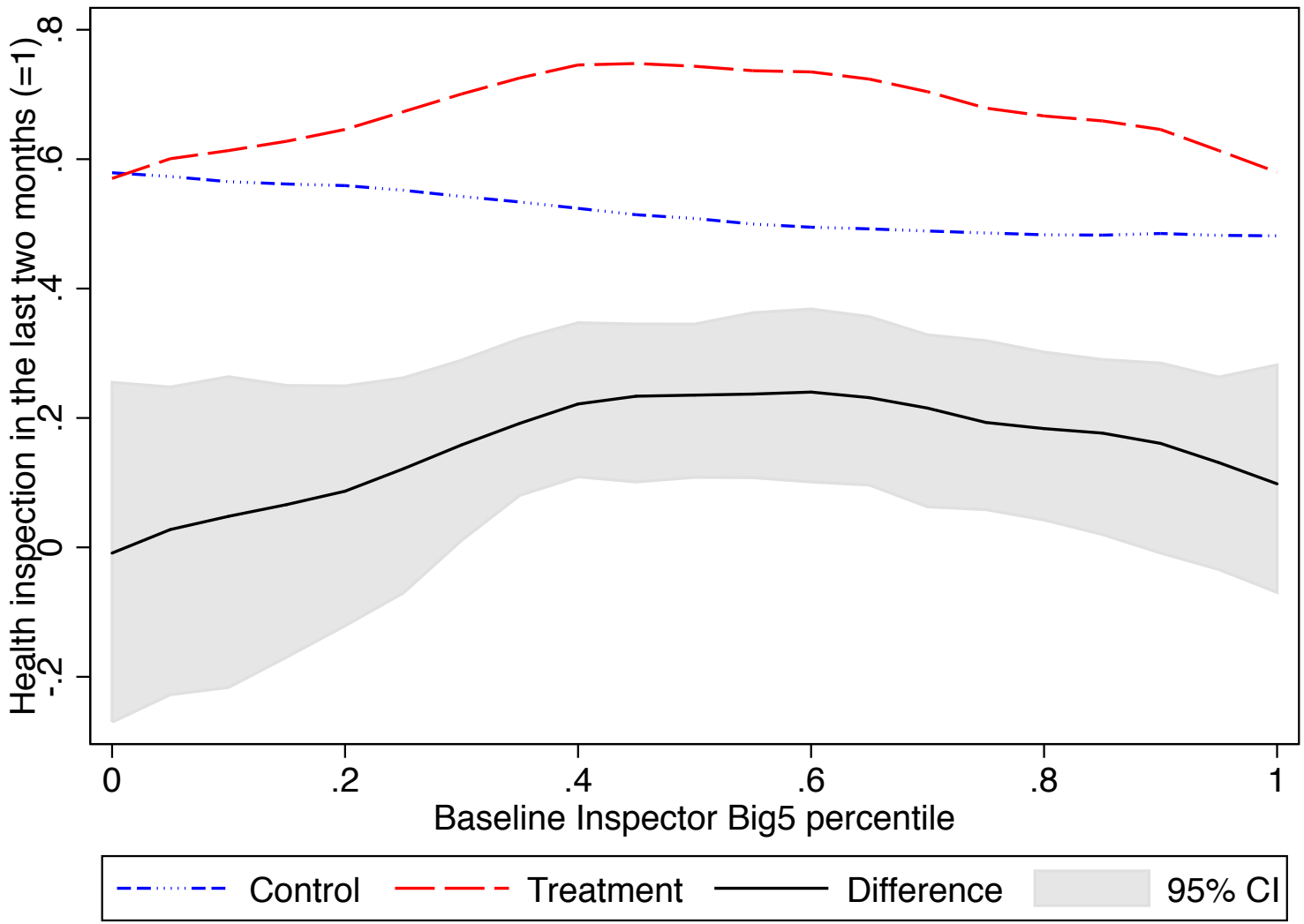
Context: Punjab Department of Health



Results


Percent facilities visited by DDO
0.10
0.30
0.50
0.70
Nov. 2011
June 2012
Oct. 2012
Month
Control
Treatment

Non-parametric differential effects by inspector personality



Results from Experiment 2

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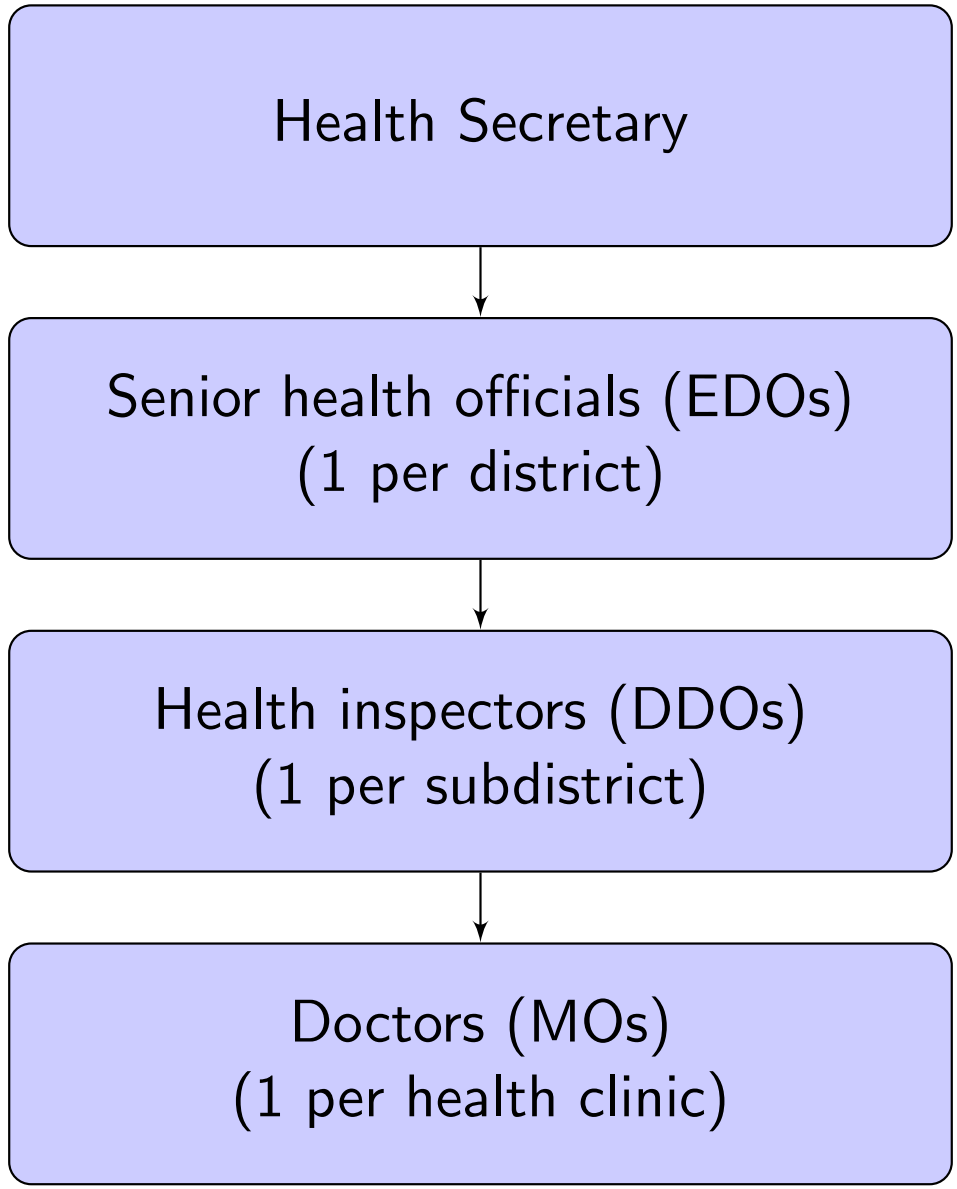
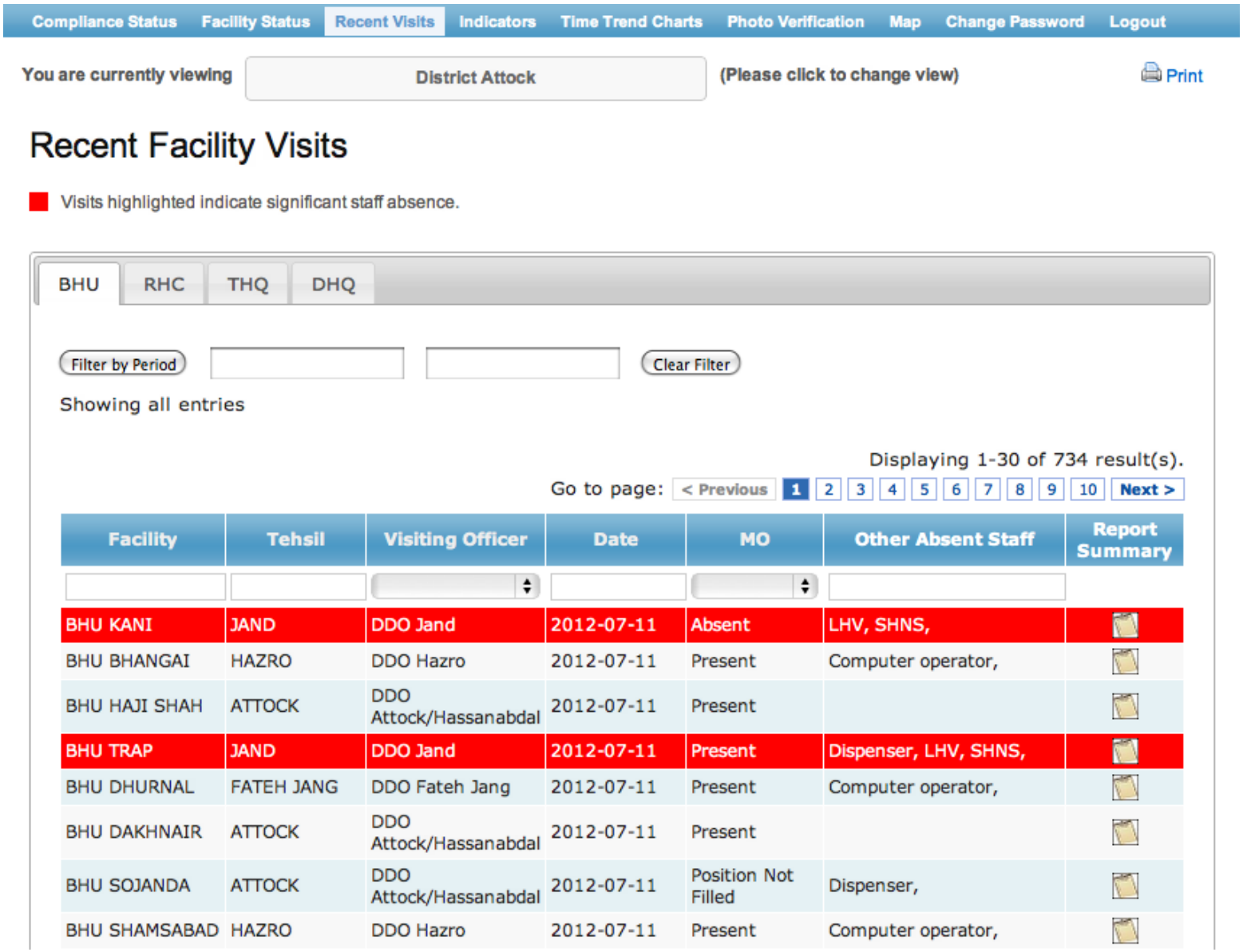


Experimental manipulations of data—making absence salient



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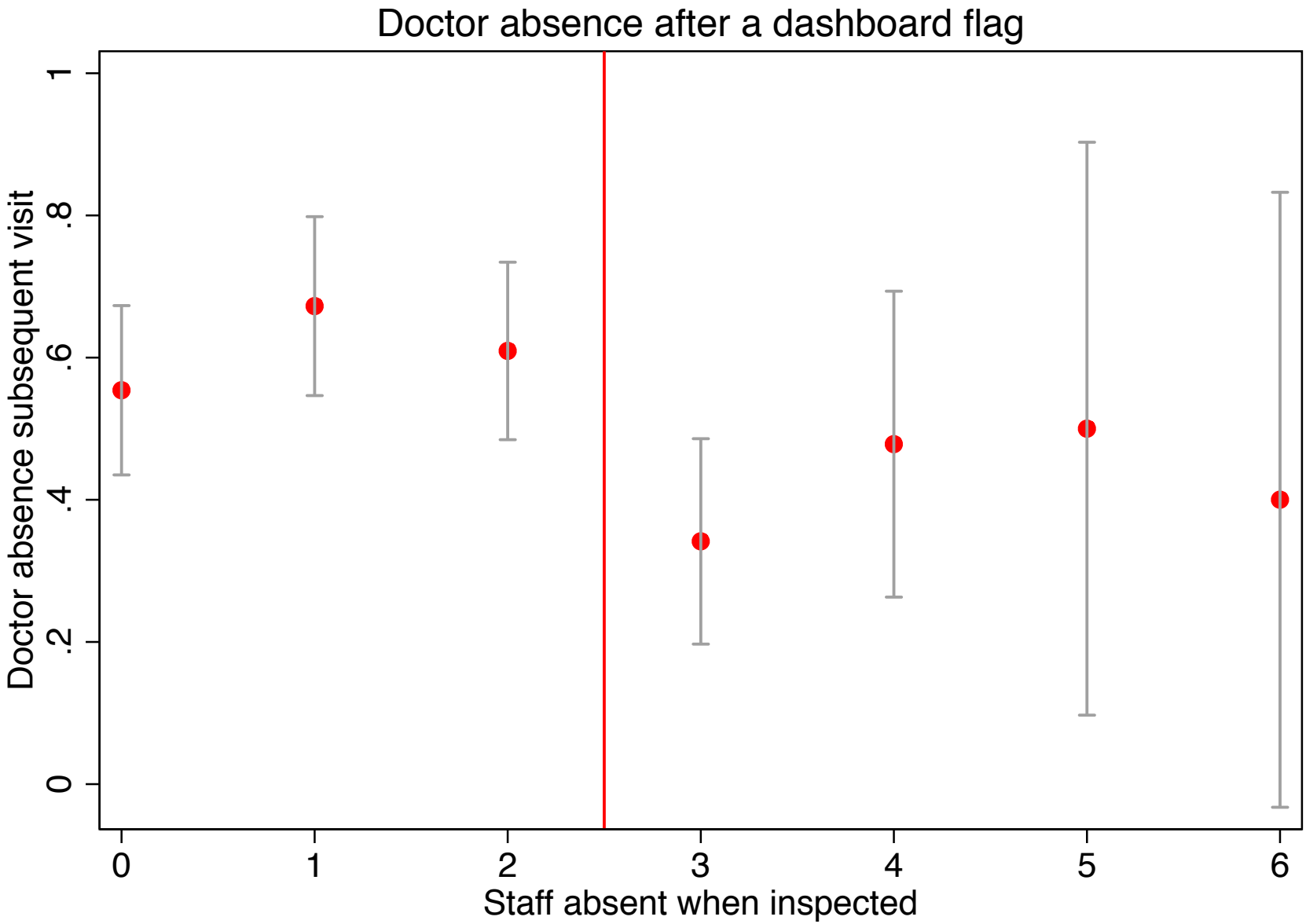

Doctor absence after a dashboard flag
Doctor absence subsequent visit
0
.2
.4
.6
.8
1
0
1
2
3
4
5
6
Staff absent when inspected

Differential clinic 'flagging' effects by senior health officer Big 5personality

	Doctor absent (=1)						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Clinic flagged as underperforming on dashboard	-0.146	-0.159	0.467	1.331	1.089	-1.012**	0.318
	(0.103)	(0.113)	(1.022)	(0.843)	(1.231)	(0.490)	(0.965)
Flagged x Big5 index		-0.402**					
		(0.200)					
Flagged x Agreeableness			-0.166				
			(0.278)				
Flagged x Conscientiousness				-0.359*			
				(0.202)			
Flagged x Extroversion					-0.322		
					(0.318)		
Flagged x Emotional stability						-0.361*	
						(0.205)	
Flagged x Openness							-0.157
							(0.326)
Mean of the dependent variable	0.480	0.480	0.480	0.480	0.480	0.480	0.480
# Observations	123	123	123	123	123	123	123
# Clinics	106	106	106	106	106	106	106
R-Squared	0.204	0.231	0.206	0.227	0.211	0.219	0.205

Notes: *$p < 0.1$, **$p < 0.05$, ***$p < 0.01$. Standard errors clustered at the clinic level reported in parentheses. All regressions include district and survey wave fixed effects. Clinics were flagged as underperforming if 3 or more of the 7 staff were absent in the last visit. All columns restrict the sample to those clinics where only 2 or 3 staff were absent (up to 7 staff can be marked absent).

▸ PSM table ▸ Full vs discontinuity samples

Senior health official time use by personality

	Share senior official time monitoring facilities	
	(1)	(2)
Number of clinics flagged as underperforming on dashboard	0.009	0.014***
	(0.006)	(0.004)
# flagged x Big5 index		0.031*
		(0.016)
Mean of the dependent variable	0.097	0.097
# Observations	17	17
R-Squared	0.124	0.361

Notes: *$p < 0.1$, **$p < 0.05$, ***$p < 0.01$. Robust standard errors reported in parentheses. Sample limited to senior health officials in treatment districts. Clinics were flagged as underperforming if 3 or more of the 7 staff were absent. The number flagged is the total number of clinics flagged in each district priort to our second endline (when we also collected senior health official personality and time use). Each regression also contains a control for the personality measure uninteracted.

Summary

- Designed and implemented smartphone monitoring system that was highly effective (roughly doubled inspection rates)
- The effectiveness of this incentive reform depended on traits:
  - **Experiment 1:** 1SD higher health inspector Big5 index $\rightarrow$ 27% differential increase in inspections in treatment vs control districts.
  - **Experiment 2:** 1SD higher senior health official Big5 index $\rightarrow$ 40% reduction in doctor absence following underperforming facility flag in treatment districts.

Policy Implications

1. Intrinsic factors/personalities matter in this domain

2. The same monitoring intervention can have different effects, depending on the profile of public servants

3. Simple manipulations to data can have big impacts

   $\rightarrow$ Gains from considering decision processes and heuristics

Thank you!

Provider Absence Rates by Country and Sector

	Absence rates (%) in	
	Primary schools	*Primary health centers*
Bangladesh	16	35
Ecuador	14	—
India	25	40
Indonesia	19	40
Peru	11	25
Uganda	27	37
Unweighted average	**19**	**35**

From: Chaudhury, Hammer, Kremer, Muralidharan, and Rogers. 2006. "Missing in Action: Teacher and Health Worker Absence in Developing Countries." Journal of Economic Perspectives, 20(1): 91-116. Go Back

Doctor summary statistics

	Mean	SD	P10	P50	P90	Obs
Big5 personality traits						
Big 5 index (z-score)	0.05	0.79	-0.99	0.05	1.14	192
Agreeableness	3.57	0.66	2.67	3.67	4.42	192
Conscientiousness	4.02	0.55	3.33	4.00	4.75	192
Extroversion	3.69	0.48	3.17	3.67	4.33	192
Emotional stability	-2.54	0.70	-3.50	-2.50	-1.67	192
Openness	2.92	0.44	2.42	2.92	3.50	192
Public Sector Motivation						
PSM index (z-score)	0.02	0.67	-0.83	-0.01	0.92	192
Attraction	3.46	0.60	2.60	3.40	4.20	192
Civic duty	4.22	0.53	3.43	4.29	5.00	192
Commitment	3.79	0.45	3.29	3.86	4.29	192
Compassion	3.55	0.53	2.88	3.50	4.25	192
Self Sacrifice	4.09	0.60	3.38	4.12	4.88	192
Social justice	3.96	0.59	3.20	4.00	4.60	192
Performance						
Present (=1)	0.23	0.42	0.00	0.00	1.00	1197

Notes: Sample: doctors in control districts that completed the personalities survey module, given in waves 2 and 3 and during a tracking round. Doctors were only asked to complete the module once. All personality traits and public sector motivation variables measured on a one to five Likert scale unless otherwise indicated.

Health inspector summary statistics

	Mean	SD	P10	P50	P90	Obs
Big5 personality traits						
Big 5 index (z-score)	0.02	0.75	-1.26	0.11	1.04	48
Agreeableness	3.66	0.54	2.67	3.79	4.25	48
Conscientiousness	4.12	0.54	3.33	4.21	4.75	48
Extroversion	3.73	0.46	3.17	3.70	4.33	48
Emotional stability	-2.34	0.62	-3.25	-2.25	-1.58	48
Openness	3.11	0.35	2.67	3.17	3.58	48
Public Sector Motivation						
PSM index (z-score)	0.07	0.61	-0.77	0.13	0.69	49
Attraction	3.57	0.57	2.80	3.60	4.25	49
Civic duty	4.44	0.42	3.86	4.57	5.00	49
Commitment	3.97	0.37	3.43	3.86	4.50	49
Compassion	3.66	0.49	3.00	3.62	4.25	49
Self Sacrifice	4.40	0.45	3.86	4.50	5.00	49
Social justice	4.20	0.43	3.60	4.20	5.00	49
Performance						
Inspector inspected in the last two months (=1)	0.53	0.49	0.00	1.00	1.00	1263

Notes: Sample: health inspectors in control districts that completed the personalities survey module, given during a single round after the final wave of clinic visits. All personality traits and public sector motivation variables measured on a one to five Likert scale unless otherwise indicated.

Differential LATEs by inspector Big 5 personality

	Inspector inspection in last 2 months (=1)						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Monitoring (=1)	0.111	0.101	-0.671	-1.107	-0.311	0.815**	-1.022
	(0.115)	(0.101)	(0.646)	(0.794)	(0.633)	(0.324)	(0.692)
	[0.182]						
Monitoring x Big5 index		0.271*					
		(0.135)					
		[0.095]					
Monitoring x Agreeableness			0.215				
			(0.167)				
			[0.294]				
Monitoring x Conscientiousness				0.295			
				(0.185)			
				[0.184]			
Monitoring x Extroversion					0.114		
					(0.162)		
					[0.306]		
Monitoring x Emotional stability						0.305**	
						(0.128)	
						[0.039]	
Monitoring x Openness							0.370
							(0.228)
							[0.033]
Mean of dependent variable	0.575	0.575	0.575	0.575	0.575	0.575	0.575
# Districts	35	35	35	35	35	35	35
# Clinics	707	707	707	707	707	707	707
# Observations	2115	2115	2115	2115	2115	2115	2115
R-Squared	0.062	0.082	0.085	0.080	0.064	0.081	0.073

Notes: *$p < 0.1$, **$p < 0.05$, ***$p < 0.01$. Standard errors clustered at the district level reported in parentheses. P-values from Fishers Exact Test reported in brackets. All regressions include clinic and survey wave fixed effects and the interaction of a post treatment dummy with each trait.

▸ PSM table

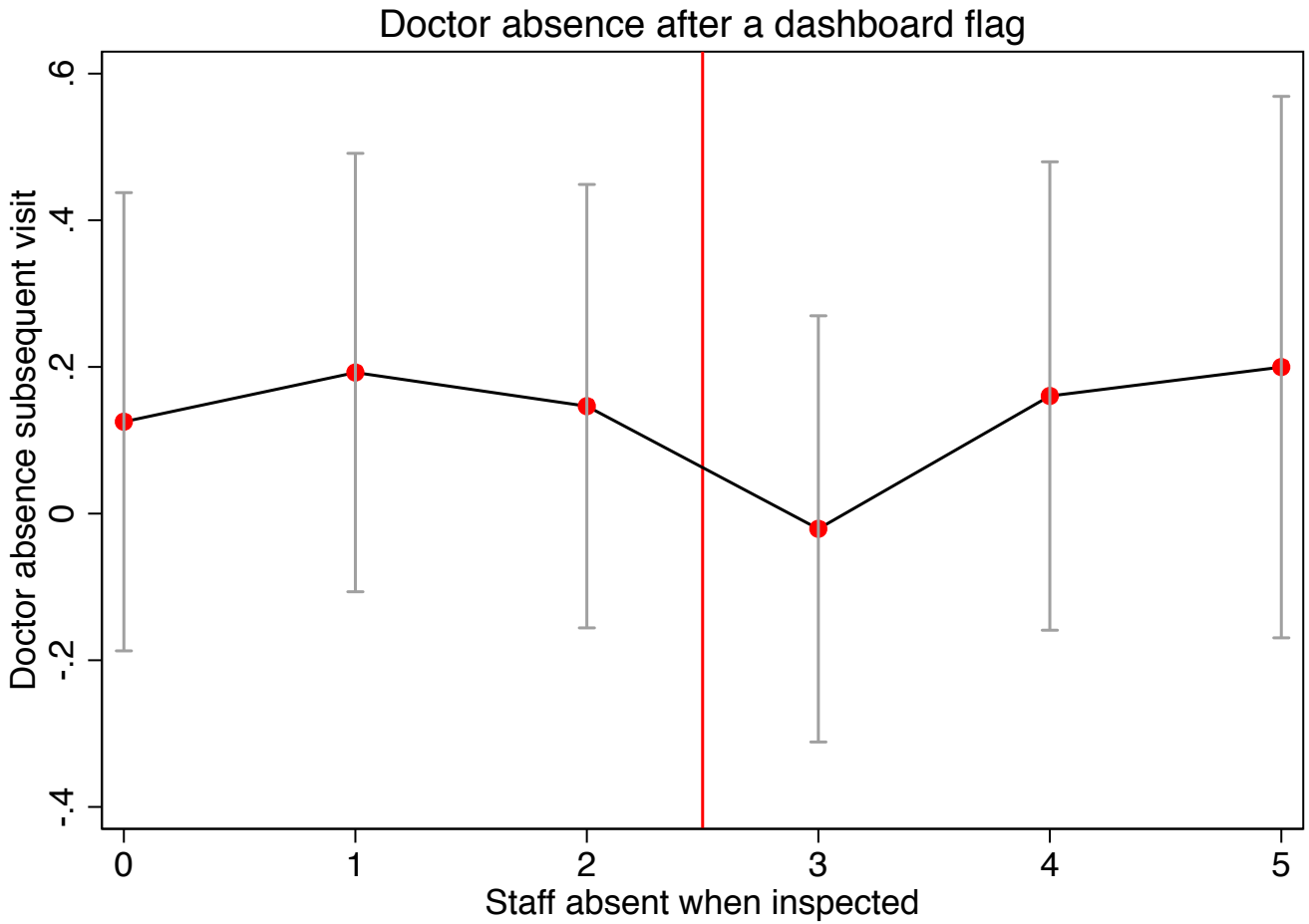
Doctor Big 5 personality and doctor attendance

	Doctor attendance (=1)					
	(1)	(2)	(3)	(4)	(5)	(6)
Big 5 index (z-score)	0.037					
	(0.034)					
Agreeableness		0.009				
		(0.036)				
Conscientiousness			0.098**			
			(0.047)			
Extroversion				0.093*		
				(0.052)		
Emotional stability					0.037	
					(0.036)	
Openness						-0.043
						(0.059)
Mean of dependent variable	0.493	0.493	0.493	0.493	0.493	0.493
# Clinics	190	190	190	190	190	190
# Observations	479	479	479	479	479	479
R-Squared	0.192	0.190	0.197	0.195	0.191	0.190

Notes: *$p < 0.1$, **$p < 0.05$, ***$p < 0.01$. Standard errors clustered at the clinic level reported in parentheses. All regressions include Tehsil (subdistrict) and survey wave fixed effects. Sample: control district clinics for which doctor personality data is available.

▸ PSM table

Flagging effects



Notes: Each point represents a coefficient from one regression of absence on a series of dummies for the maximum number of individuals absent at a facility in any visit during a flagging window. The regression includes district and survey wave fixed effects. 95 percent confidence intervals are shown, from standard errors clustered at the clinic level. Note clinics were flagged as underperforming if 3 or more of the 7 staff were absent in the last visit.

Doctor PSM personality and doctor attendance

	Doctor attendance (=1)						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
PSM index (z-score)	0.074**						
	(0.036)						
Attraction		0.048					
		(0.042)					
Civic duty			0.115**				
			(0.051)				
Commitment				0.060			
				(0.052)			
Compassion					0.015		
					(0.053)		
Self Sacrifice						0.089**	
						(0.042)	
Social justice							0.047
							(0.038)
Mean of dependent variable	0.493	0.493	0.493	0.493	0.493	0.493	0.493
# Clinics	190	190	190	190	190	190	190
# Observations	479	479	479	479	479	479	479
R-Squared	0.196	0.192	0.199	0.192	0.190	0.197	0.192

Notes: *$p < 0.1$, **$p < 0.05$, ***$p < 0.01$. Standard errors clustered at the clinic level reported in parentheses. All regressions include Tehsil (subdistrict) and survey wave fixed effects. Sample: control district clinics for which doctor personality data is available.

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Inspector Big 5 personality and health inspections

	Health inspector inspection in last two months (=1)					
	(1)	(2)	(3)	(4)	(5)	(6)
Big 5 index (z-score)	-0.063					
	(0.049)					
Agreeableness		-0.047				
		(0.061)				
Conscientiousness			-0.100*			
			(0.059)			
Extroversion				-0.093		
				(0.073)		
Emotional stability					-0.102	
					(0.061)	
Openness						0.038
						(0.078)
Mean of dependent variable	0.511	0.511	0.511	0.511	0.511	0.511
# Clinics	46	46	46	46	46	46
# Observations	523	523	523	523	523	523
R-Squared	0.181	0.179	0.182	0.182	0.183	0.178

Notes: *$p < 0.1$, **$p < 0.05$, ***$p < 0.01$. Standard errors clustered at the clinic level reported in parentheses. All regressions include Tehsil (subdistrict) and survey wave fixed effects. Sample: control district clinics.

Inspector PSM personality and health inspections

	Health inspector inspection in last two months (=1)						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
PSM index (z-score)	-0.021						
	(0.058)						
Attraction		-0.027					
		(0.065)					
Civic duty			0.017				
			(0.060)				
Commitment				-0.016			
				(0.087)			
Compassion					-0.095		
					(0.114)		
Self Sacrifice						-0.002	
						(0.044)	
Social justice							-0.031
							(0.080)
Mean of dependent variable	0.495	0.495	0.495	0.495	0.495	0.495	0.495
# Clinics	47	47	47	47	47	47	47
# Observations	539	539	539	539	539	539	539
R-Squared	0.199	0.200	0.199	0.199	0.202	0.199	0.199

Notes: *$p < 0.1$, **$p < 0.05$, ***$p < 0.01$. Standard errors clustered at the clinic level reported in parentheses. All regressions include Tehsil (subdistrict) and survey wave fixed effects. Sample: control district clinics.

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Doctor Big 5 personality and doctor-inspector collusion

	Doctor-inspector collusion (=1)					
	(1)	(2)	(3)	(4)	(5)	(6)
Big 5 index (z-score)	-0.112***					
	(0.031)					
Agreeableness		-0.128***				
		(0.043)				
Conscientiousness			-0.120***			
			(0.038)			
Extroversion				-0.141***		
				(0.042)		
Emotional stability					-0.106***	
					(0.031)	
Openness						-0.056
						(0.065)
Mean of dependent variable	0.092	0.092	0.092	0.092	0.092	0.092
# Clinics	239	239	239	239	239	239
# Observations	239	239	239	239	239	239
R-Squared	0.438	0.434	0.418	0.420	0.422	0.383

Notes: *$p < 0.1$, **$p < 0.05$, ***$p < 0.01$. Standard errors clustered at the clinic level reported in parentheses. All regressions include Tehsil (subdistrict) and survey wave fixed effects. Sample: clinics in treatment districts with doctors that completed the personalities survey module. Collusion is a dummy variable coded as 1 when a doctor is reported absent in both survey waves 2 and 3 but is reported as present by DDOs during every visit between the launch of the program and present (up to 73 visits).

Doctor PSM personality and doctor-inspector collusion

	Doctor-inspector collusion (=1)						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
PSM index (z-score)	-0.150***						
	(0.035)						
Attraction		-0.102***					
		(0.036)					
Civic duty			-0.107***				
			(0.037)				
Commitment				-0.149***			
				(0.047)			
Compassion					-0.164***		
					(0.046)		
Self Sacrifice						-0.140***	
						(0.038)	
Social justice							-0.107***
							(0.036)
Mean of dependent variable	0.092	0.092	0.092	0.092	0.092	0.092	0.092
# Clinics	239	239	239	239	239	239	239
# Observations	239	239	239	239	239	239	239
R-Squared	0.478	0.416	0.419	0.432	0.439	0.437	0.415

Notes: *$p < 0.1$, **$p < 0.05$, ***$p < 0.01$. Standard errors clustered at the clinic level reported in parentheses. All regressions include Tehsil (subdistrict) and survey wave fixed effects. Sample: clinics in treatment districts with doctors that completed the personalities survey module. Collusion is a dummy variable coded as 1 when a doctor is reported absent in both survey waves 2 and 3 but is reported as present by DDOs during every visit between the launch of the program and present (up to 73 visits).

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Inspector Big 5 personality and doctor-inspector collusion

	Doctor-inspector collusion (=1)					
	(1)	(2)	(3)	(4)	(5)	(6)
Big 5 index (z-score)	0.041					
	(0.045)					
Agreeableness		0.015				
		(0.064)				
Conscientiousness			0.009			
			(0.037)			
Extroversion				0.109*		
				(0.055)		
Emotional stability					0.011	
					(0.024)	
Openness						-0.021
						(0.046)
Mean of dependent variable	0.088	0.088	0.088	0.088	0.088	0.088
# Inspectors	47	47	47	47	47	47
# Observations	251	251	251	251	251	251
R-Squared	0.142	0.140	0.140	0.154	0.140	0.140

Notes: $*p < 0.1$, $**p < 0.05$, $***p < 0.01$. Standard errors clustered at the clinic level reported in parentheses. All regressions include Tehsil (subdistrict) and survey wave fixed effects. Sample: clinics in treatment districts. Collusion is a dummy variable coded as 1 when a doctor is reported absent in both survey waves 2 and 3 but is reported as present by DDOs during every visit between the launch of the program and present (up to 73 visits).

Inspector PSM personality and doctor-inspector collusion

	Doctor-inspector collusion (=1)						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
PSM index (z-score)	-0.075**						
	(0.032)						
Attraction		-0.117*					
		(0.068)					
Civic duty			0.039				
			(0.049)				
Commitment				-0.132***			
				(0.042)			
Compassion					-0.052		
					(0.047)		
Self Sacrifice						-0.055	
						(0.034)	
Social justice							-0.073*
							(0.041)
Mean of dependent variable	0.091	0.091	0.091	0.091	0.091	0.091	0.091
# Inspectors	48	48	48	48	48	48	48
# Observations	253	253	253	253	253	253	253
R-Squared	0.152	0.149	0.140	0.163	0.143	0.143	0.147

Notes: *$p < 0.1$, **$p < 0.05$, ***$p < 0.01$. Standard errors clustered at the clinic level reported in parentheses. All regressions include Tehsil (subdistrict) and survey wave fixed effects. Sample: clinics in treatment districts. Collusion is a dummy variable coded as 1 when a doctor is reported absent in both survey waves 2 and 3 but is reported as present by DDOs during every visit between the launch of the program and present (up to 73 visits).

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Differential LATEs by inspector PSM personality

	Inspector inspection in last 2 months (=1)							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Monitoring (=1)	0.121	0.110	-1.022**	0.648	-0.282	-0.530	-0.122	-0.752
	(0.112)	(0.105)	(0.473)	(0.682)	(0.688)	(0.784)	(0.884)	(0.713)
	[]							
Monitoring x PSM index		0.160						
		(0.140)						
		[0.211]						
Monitoring x Attraction			0.316**					
			(0.123)					
			[0.02]					
Monitoring x Civic duty				-0.124				
				(0.154)				
				[0.723]				
Monitoring x Commitment					0.098			
					(0.165)			
					[0.297]			
Monitoring x Compassion						0.175		
						(0.199)		
						[0.198]		
Monitoring x Self sacrifice							0.056	
							(0.189)	
							[0.363]	
Monitoring x Social justice								0.206
								(0.163)
								[0.179]
Mean of dependent variable	0.567	0.567	0.567	0.567	0.567	0.567	0.567	0.567
# Districts	35	35	35	35	35	35	35	35
# Clinics	721	721	721	721	721	721	721	721
# Observations	2157	2157	2157	2157	2157	2157	2157	2157
R-Squared	0.063	0.072	0.079	0.065	0.077	0.066	0.063	0.073

Notes: *$p < 0.1$, **$p < 0.05$, ***$p < 0.01$. Standard errors clustered at the district level reported in parentheses. P-values from Fishers Exact Test reported in brackets. All regressions include clinic and survey wave fixed effects and the interaction of a post treatment dummy with each trait.

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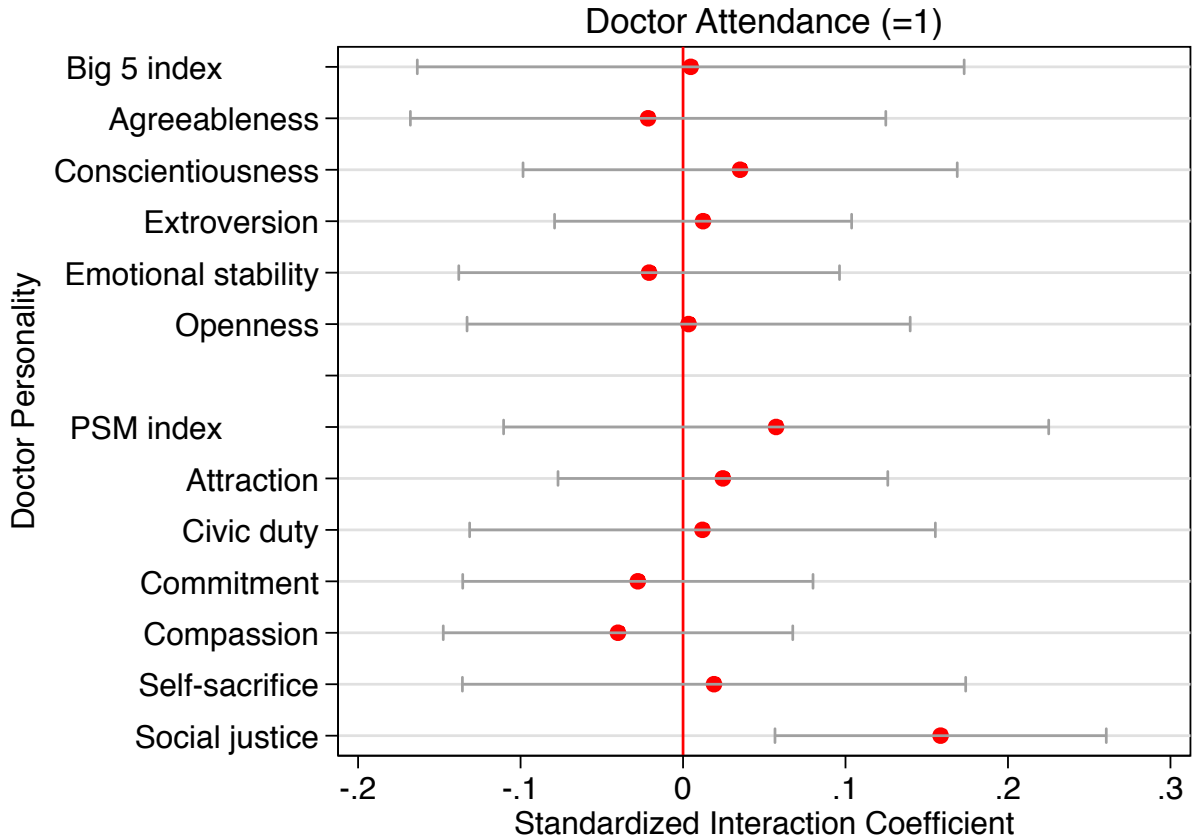
Differential LATEs by doctor personality



Notes: Each row represents the interaction coefficient from a regression of doctor attendance on the shown personality trait interacted with a treatment dummy. Regressions include a post*treatment dummy and survey wave and clinic fixed effects and SEs are clustered at the district level.

Differential LATEs by doctor Big 5 personality

	Doctor attendance (=1)						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Monitoring (=1)	0.019	0.022	0.144	-0.232	-0.073	-0.061	-0.006
	(0.076)	(0.077)	(0.417)	(0.495)	(0.374)	(0.252)	(0.530)
	[0.336]						
Monitoring x Big5 index		0.005					
		(0.086)					
		[0.545]					
Monitoring x Agreeableness			-0.033				
			(0.116)				
			[0.627]				
Monitoring x Conscientiousness				0.063			
				(0.123)			
				[0.489]			
Monitoring x Extroversion					0.026		
					(0.097)		
					[0.443]		
Monitoring x Emotional stability						-0.031	
						(0.090)	
						[0.619]	
Monitoring x Openness							0.009
							(0.177)
							[0.450]
Mean of dependent variable	0.540	0.540	0.540	0.540	0.540	0.540	0.540
# Districts	34	34	34	34	34	34	34
# Clinics	474	474	474	474	474	474	474
# Observations	1216	1216	1216	1216	1216	1216	1216
R-Squared	0.013	0.013	0.016	0.013	0.013	0.013	0.013

Notes: *$p < 0.1$, **$p < 0.05$, ***$p < 0.01$. Standard errors clustered at the district level reported in parentheses. P-values from Fishers Exact Test reported in brackets. All regressions include clinic and survey wave fixed effects.

Differential LATEs by doctor PSM personality

	Doctor attendance (=1)							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Monitoring (=1)	0.019	0.020	-0.123	-0.067	0.231	0.296	-0.114	-1.058***
	(0.076)	(0.076)	(0.313)	(0.547)	(0.409)	(0.369)	(0.535)	(0.327)
	[]							
Monitoring x PSM index		0.057						
		(0.086)						
		[0.279]						
Monitoring x Attraction			0.040					
			(0.085)					
			[0.355]					
Monitoring x Civic duty				0.021				
				(0.125)				
				[0.543]				
Monitoring x Commitment					-0.056			
					(0.111)			
					[0.619]			
Monitoring x Compassion						-0.077		
						(0.106)		
						[0.771]		
Monitoring x Self sacrifice							0.033	
							(0.135)	
							[0.496]	
Monitoring x Social justice								0.273***
								(0.090)
								[0.028]
Mean of dependent variable	0.540	0.540	0.540	0.540	0.540	0.540	0.540	0.540
# Districts	34	34	34	34	34	34	34	34
# Clinics	474	474	474	474	474	474	474	474
# Observations	1216	1216	1216	1216	1216	1216	1216	1216
R-Squared	0.013	0.018	0.016	0.013	0.019	0.016	0.013	0.027

Notes: *$p < 0.1$, **$p < 0.05$, ***$p < 0.01$. Standard errors clustered at the district level reported in parentheses. P-values from Fishers Exact Test reported in brackets. All regressions include clinic and survey wave fixed effects.

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Differential clinic 'flagging' effects by senior health officer PSM personality

	Doctor absent (=1)							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Clinic flagged as underperforming on dashboard	-0.165	0.326	0.137	2.449	-0.418	-0.433	1.187	
	(0.105)	(0.661)	(0.946)	(1.673)	(1.134)	(0.903)	(0.938)	
Flagged x PSM index	-0.124							
	(0.169)							
Flagged x Attraction		-0.128						
		(0.180)						
Flagged x Civic duty			-0.065					
			(0.214)					
Flagged x Commitment				-0.700				
				(0.450)				
Flagged x Compassion					0.071			
					(0.292)			
Flagged x Self sacrifice						0.066		
						(0.205)		
Flagged x Social justice							-0.343	
							(0.240)	
Mean of dependant variable	0.480	0.480	0.480	0.480	0.480	0.480	0.480	
# Observations	123	123	123	123	123	123	123	
# Clinics	106	106	106	106	106	106	106	
R-Squared	0.208	0.207	0.204	0.217	0.204	0.204	0.219	

Notes: *$p < 0.1$, **$p < 0.05$, ***$p < 0.01$. Standard errors clustered at the clinic level reported in parentheses. All regressions include district and survey wave fixed effects. Clinics were flagged as underperforming if 3 or more of the 7 staff were absent in the last visit. All columns restrict the sample to those clinics where only 2 or 3 staff were absent (up to 7 staff can be marked absent).

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Differential clinic 'flagging' effects by senior health officer personality

	Doctor absent (=1)					
	(1)	(2)	(3)	(4)	(5)	(6)
Clinic flagged as underperforming on dashboard	-0.100	-0.146	-0.094	-0.159	-0.098	-0.165
	(0.067)	(0.103)	(0.067)	(0.098)	(0.070)	(0.105)
Flagged x Big5 index			-0.118	-0.402**		
			(0.131)	(0.200)		
Flagged x PSM index					0.016	-0.124
					(0.108)	(0.169)
Mean of the dependent variable	0.521	0.480	0.521	0.480	0.521	0.480
# Observations	326	123	326	123	326	123
# Clinics	228	106	228	106	228	106
R-Squared	0.114	0.204	0.117	0.231	0.114	0.208
Sample	Full	Discontinuity	Full	Discontinuity	Full	Discontinuity

Notes: *$p < 0.1$, **$p < 0.05$, ***$p < 0.01$. Standard errors clustered at the clinic level reported in parentheses. All regressions include district and survey wave fixed effects. Clinics were flagged as underperforming if 3 or more of the 7 staff were absent in the last visit. Columns 2 and 4 restrict the sample to those clinics where only 2 or 3 staff were absent (up to 7 staff can be marked absent). We call this sample the "discontinuity" sample.

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