The Political Economy of Public Sector Absence: Experimental Evidence from Pakistan

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- Farasat Iqbal, Punjab Health Sector Reforms Program

- International Growth Center (IGC)

Policy Problem I

- ▶ Information bottlenecks are a problem in many government bureaucracies
- ▶ In Punjab, there are about 3,000 public health facilities spread across 205,344 square kilometers.

  $\rightarrow$ value to collecting diffuse information on performance

- ▶ This leaves space for a range of problems:

  1. **Passive Waste:** Lack of data on resource utilization in hospitals, schools, and other service facilities. Misallocated (or unallocated) resources. Ineffective disease response.

  2. **Active Waste:** Bribe-taking, resource theft, absenteeism

Policy Problem II

▶ Public worker absence is common and tends to resist reform. (About 35 percent across six countries)
  ◦ Chaudhury, Hammer, Kremer, Muralidharan, and Rogers, 2006

▶ doctor absence - 68.5% at baseline

▶ only about 22% of facilities inspected per month

  $\rightarrow$ incentive issues....but also political economy issues

Policy Problem II

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Two Potential Explanations:

1. Clientelism - Jobs with large salaries and no reporting requirements are a nice source of rents for politicians to share with supporters

2. Competition - If absence is electorally salient, incumbent politicians (especially in competitive constituencies) have an incentive to address it.

This Paper

Test this idea using:

1. a **controlled evaluation** of a novel smartphone technology designed to increase inspections at rural clinics

2. data on **election outcomes** in the 240 constituencies where the experiment took place

3. **attendance recorded** during unannounced visits in 850 facilities

4. **surveys of connections** between local politicians and health staff (inspectors and doctors)

5. direct **survey of political interference** experienced by senior officials

6. **manipulation of information** transmitted to senior policymakers using an online dashboard
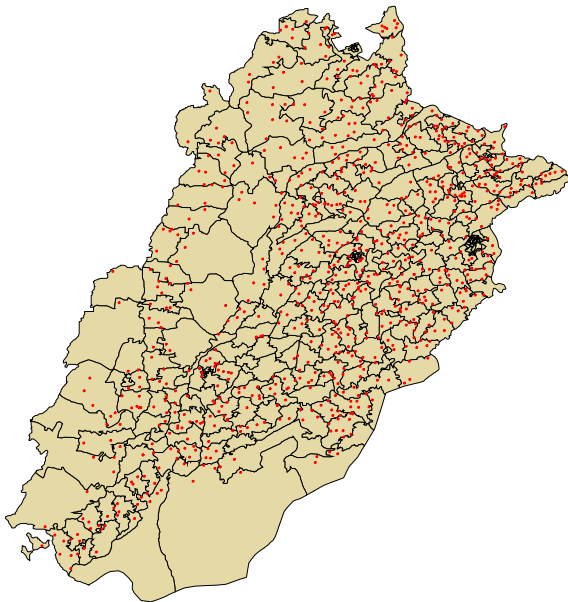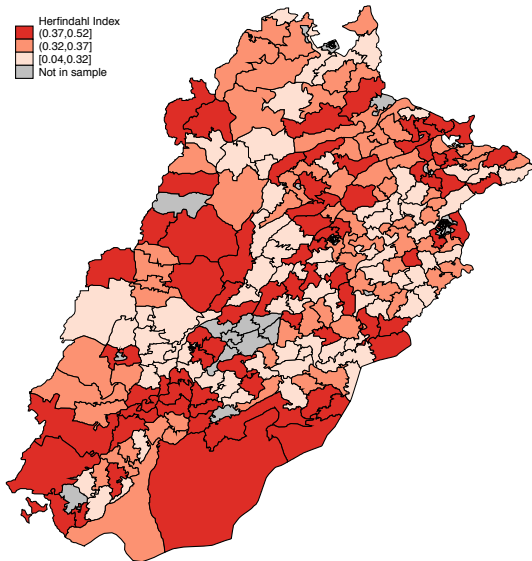
Plan

Punjab Department of Health (simplified)
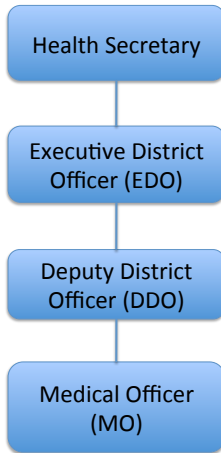
Rural Clinic Example

Rural Clinic Sample

Electoral Competitiveness in Punjab (Based on 2008 Electoral Outcomes)

Herfindahl Index
- (0.37,0.52]
- (0.32,0.37]
- [0.04,0.32]
- Not in sample

Plan

Political Interference in Bureaucratic Decisions

- ▶ Political Interference in Senior Bureaucracy
    - ▶ Interview all 187 inspectors, all 35 senior officers
    - ▶ Correlate with political interference

- ▶ "Have you personally ever been pressured by a person with influence to either (a) not take action against doctors or other staff that were performing unsatisfactorily in your tehsil or district or (b) assign them to their preferred posting?"

- ▶ "If yes, then identify the type of influential person from the following list: Member of National Assembly; Member of Provincial Assembly; Other Politician; Senior Bureaucrat; Police; Powerful private person; Other; No response"

- ▶ "How many of these incidents occurred in the last year?"

Do Politicians Interfere in Bureaucratic Decisions?

- ▶ 44 percent of health officials report interference

    - ▶ About 90 percent of interference is due to politicians

- ▶ Significantly higher in low political competition areas

    - ▶ In least competitive tercile of constituencies officers report average of 4.06 instances as opposed to 1.9 in most competitive constituencies.

Table: Political Interference in Health Bureaucracy

Variable	Mean	SD	N
Panel A: Senior Officials and Inspectors			
Ever influenced by Any Powerful Actor	0.4	0.492	150
Ever Influenced by Provincial Assembly Member	0.322	0.469	149
Instances of Interference by Provincial Assembly Member	2.786	6.158	140
Panel B: Senior Officials Only			
Ever influenced by Any Powerful Actor	0.441	0.504	34
Ever Influenced by Provincial Assembly Member	0.441	0.504	34
Instances of Interference by Provincial Assembly Member	4.000	7.141	29
Panel C: Inspectors Only			
Ever influenced by Any Powerful Actor	0.388	0.489	116
Ever Influenced by Provincial Assembly Member	0.287	0.454	115
Instances of Interference by Provincial Assembly Member	2.468	5.87	111

Doctor Attendance and Politicians

- Measure absence in 850 (34%) of clinics spanning 240 constituencies

- Interview 541 of about 560 doctors

- Visit in November 2011, June 2012, and October 2012

- We find
    - Doctors present 1 out of 3 times at baseline
    - Attendance falls by 40 percentage points as you move from high to low political competition
    - Doctors who know the politician show up to work 21 % less

Political Connections, Competition, and Doctor Attendance

$Present_{ckw} = \beta_1 Knows\ MP_{ck} + \beta_2 Pol\ Comp_c$
$+ \beta_3 Knows\ MP_{ck} \times Pol\ Comp_c + \beta_4 \mathbf{X}_{ckw}$
$+ f(X_k, Y_k) + \gamma_w + \varepsilon_{ckw}$

$\forall k, where X_k, Y_k \in (-h, h)$

- $Present_{ckw}$ is an indicator variable that equals 1 if an assigned doctor at clinic k in constituency c is present during an unannounced inspection in survey wave w
- $f(X_k, Y_k)$ is a flexible function in latitudes (X) and longitudes (Y) for every clinic k. (Michalopoulos and Papaioannou (2013) and Dell (2010))
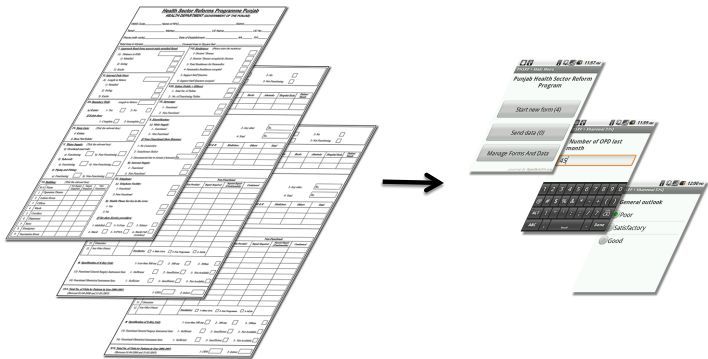- h refers to nearest constituency boundary for each clinic

Dependent Variable:	Doctor Present (=1)						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Political Competition Index	-0.624*	-0.719**	-1.547*			-0.127	-0.335
	(0.356)	(0.354)	(0.888)			(0.472)	(0.474)
Doctor Knows Local MPA Personally (=1)				-0.207**	-0.208**	0.194	0.154
				(0.084)	(0.091)	(0.268)	(0.286)
Doctor Knows × Political Competition Index						-1.222*	-1.141
						(0.704)	(0.755)
Distance to District Center (in minutes)		-0.001	-0.003		-0.000		0.001
		(0.001)	(0.003)		(0.001)		(0.001)
Mean, Competition ≤ 33 percentile	0.444	0.444	0.421			0.521	0.521
Mean, Doctor Knows=0				0.547	0.547	0.546	0.546
Comp ≤ 33 perc & Mean, Doctor Knows=0						0.546	0.546
# Constituencies	105	105	103	92	92	91	91
# Observations	623	623	495	515	515	514	514
R-Squared	0.155	0.160	0.397	0.257	0.272	0.201	0.208
County Fixed Effects	Yes	Yes	-	-	-	Yes	Yes
Constituency Fixed Effects	-	-	-	Yes	Yes	-	-
Spatial Controls	-	Yes	Yes	-	Yes	-	Yes
Boundary Fixed Effects	-	-	Yes	-	-	-	-
Triangular Kernel	-	-	Yes	-	-	-	-
Bandwidth	All data	All data	5 Km	All data	All data	All data	All data

Plan

Same data, new interface

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

Compliance - Last Month (by facility type)
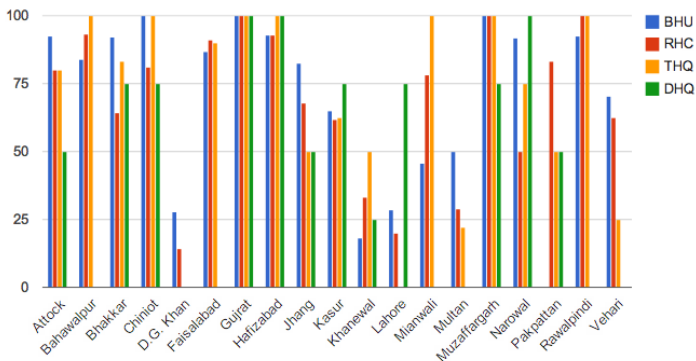
Legend:
- BHU (blue)
- RHC (red)
- THQ (orange)
- DHQ (green)

X-axis: Attock, Bahawalpur, Bhakkar, Chiniot, D. G. Khan, Faisalabad, Gujrat, Hafizabad, Jhang, Kasur, Khanewal, Lahore, Mianwali, Multan, Muzaffargarh, Narowal, Pakpattan, Rawalpindi, Vehari

Punjab in Pakistan

Key:

- Treatment
- Control
- Pilot District - (Khanewal)

This map is adapted from a map of Punjab districts made available for use by Nomi887 at en.wikpedia licensed under the Creative Commons Attribution-Share Alike 3.0 Uported license.
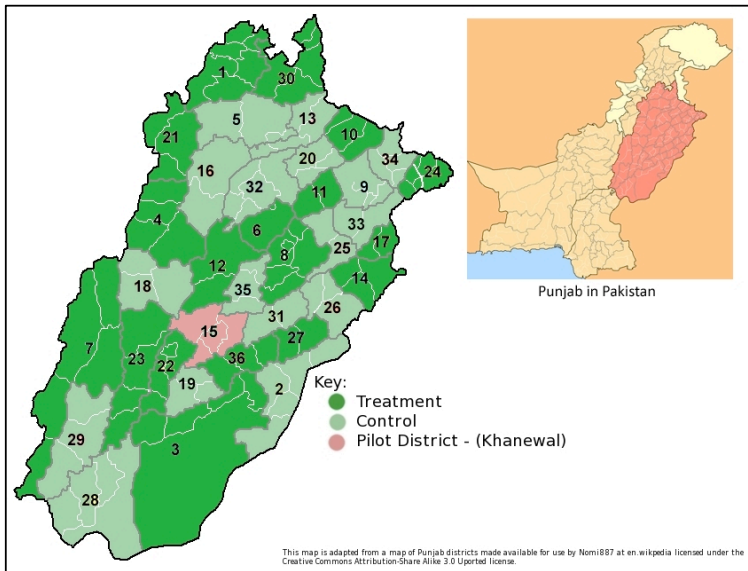
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Table: The Effect of Smartphone Monitoring on Inspectors

	Treatment (1)	Control (2)	Difference (3)	p-value Mean Diff (4)	p-value Exact Test (5)
Panel A: Treatment Effects on the Rate of Inspections					
Facility Inspected in the Previous Month (=1)	0.426	0.242	0.184	0.008	0.001
	(0.048)	(0.044)	(0.065)		
# of Observations	759	761			
Wave 2 only (June 2012)	0.519	0.253	0.266	0.002	0.003
	(0.063)	(0.047)	(0.079)		
# of Observations	366	372			
Wave 3 only (October 2012)	0.338	0.231	0.107	0.175	0.057
	(0.053)	(0.056)	(0.077)		
# of Observations	393	389			
Panel B: Treatment Effects on Time-use of Inspectors					
Breaks During Official Duty	16.189	22.500	-6.311	0.338	0.716
	(4.993)	(4.151)	(6.494)		
(i) Total Time Inspecting	121.189	76.961	44.228	0.105	0.073
	(24.152)	(10.966)	(26.525)		
(ii) Total Time Managing In Head Office	47.828	69.485	-21.657	0.273	0.808
	(9.440)	(16.976)	(19.424)		
(iii) Duty Unrelated to Facility Management	281.803	229.975	51.828	0.258	0.121
	(30.167)	(33.481)	(45.067)		
Total Minutes Working (i) + (ii) + (iii)	450.820	376.422	74.398	0.082	0.045
	(18.380)	(37.163)	(41.460)		
# of Observations	122	102			

Table: Effects of Smart Phone Monitoring on Doctors

Dependent Var.	Doctor Present (=1)				
	(1)	(2)	(3)	(4)	(5)
Monitoring	-0.005				
	(0.068)				
	[0.546]				
Monitoring x High Political Competition		0.102	0.142		
		(0.063)	(0.103)		
		[0.057]	[0.068]		
Monitoring x Med Political Competition		-0.059	-0.083		
		(0.067)	(0.085)		
		[0.873]	[0.797]		
Monitoring x Low Political Competition		-0.066	-0.034		
		(0.060)	(0.099)		
		[0.900]	[0.728]		
Monitoring x Doctor Does Not Know Politician				0.011	0.036
				(0.074)	(0.086)
				[0.494]	[0.297]
Monitoring x Doctor Knows Politician				-0.104	-0.216
				(0.150)	(0.135)
				[0.698]	[0.878]
Mean in Controls	0.424				
Mon. x High = Mon. x Med. (p-value)		0.079	0.070		
Mon. x High = Mon. x Low. (p-value)		0.027	0.160		
High Pol. Comp. Mean in Controls		0.202	0.441		
Med. Pol. Comp. Mean in Controls		0.234	0.405		
Low Pol. Comp. Mean in Controls		0.240	0.437		
Mon. x Does Not Know = Mon. x Knows (p-value)				0.500	0.130
Does Not Know Politician Mean in Controls				0.459	0.544
Knows Politician Mean in Controls				0.225	0.261
# Districts	35	35	35	35	35
# Clinics	670	842	664	850	670
# Observations	1528	2398	1518	2416	1528
R-Squared	0.009	0.010	0.013	0.015	0.022

Plan

Salience of Data

- **Research Design:**
  - Implement a smartphone-based monitoring system linked to an online dashboard.
  - Flag a facility for low attendance at an arbitrary threshold.

- **Results**
  1. Flagging a facility increases subsequent doctor attendance by 27 percentage points.
  2. In the most competitive third of constituencies, flagging a facility increases subsequent attendance by 32 percentage points

	District	Facility Level	Facility Count	Monthly Visits Assigned	Visits Performed (Current Month)		Visits Performed (Last Month)			
					Unique	Total	Unique	Total	Compliance	
⊞	Attock	Total	73	209	3	3	89	188	89.95 %	Entries
⊞	Bahawalpur	Total	87	213	4	4	29	187	85.92 %	Entries
⊞	Bhakkar	Total	47	139	0	0	6	123	88.49 %	Entries
⊞	Chiniot	Total	42	139	3	3	69	138	97.12 %	Entries
⊞	D.G. Khan	Total	62	149	1	1	24	36	24.16 %	Entries
⊞	Faisalabad	Total	185	219	3	3	38	192	87.67 %	Entries
⊞	Gujrat	Total	101	149	1	1	25	190	100 %	Entries
⊞	Hafizabad	Total	39	75	3	3	44	70	93.33 %	Entries
⊞	Jhang	Total	70	151	1	1	102	118	78.15 %	Entries
⊞	Kasur	Total	99	191	4	4	22	123	64.4 %	Entries
⊞	Khanewal	Total	90	143	2	2	31	31	21.68 %	Entries
⊞	Lahore	Total	44	139	1	1	3	42	28.78 %	Entries
⊞	Mianwali	Total	53	133	0	0	54	70	51.88 %	Entries
⊞	Multan	Total	89	176	0	0	2	76	43.18 %	Entries
⊞	Muzaffargarh	Total	87	189	1	2	40	223	99.47 %	Entries
⊞	Narowal	Total	66	117	1	1	17	98	82.91 %	Entries
⊞	Pakpattan	Total	59	109	2	2	2	18	16.51 %	Entries
⊞	Rawalpindi	Total	112	183	1	1	147	172	93.99 %	Entries
⊞	Vehari	Total	91	155	0	0	79	102	65.81 %	Entries

Plan

Table: Effect of Flagging Underperformance on the Dashboard

	Doctor Present in Unannounced Visit (=1)			
	(1)	(2)	(3)	(4)
Flagged	0.090	0.266**		
	(0.077)	(0.110)		
Flagged x High Competition			0.323**	
			(0.152)	
Flagged x Med Competition			0.298	
			(0.191)	
Flagged x Low Competition			-0.214	
			(0.257)	
Flagged x Doctor Does Not Know Politician				0.184
				(0.117)
Flagged x Doctor Knows Politician				-0.427
				(0.303)
Constant	0.409***	0.277***	0.259	0.835***
	(0.045)	(0.087)	(0.211)	(0.279)
Flagged x High Comp = Flagged x Med Comp (p-value)			0.917	
Flagged x High Comp = Flagged x Low Comp (p-value)			0.095	
Flagged x Doctor Does Not Know = Flagged x Doctor Knows (p-value)				0.050
# Clinics	195	78	78	69
# Reports	252	88	88	77
R-Squared	0.129	0.340	0.405	0.412
District Fixed Effects	Yes	Yes	Yes	Yes
Sample	Full	Discontinuity	Discontinuity	Discontinuity

Notes: Delay is 11, length is 14. $*p < 0.1$, $**p < 0.05$, $***p < 0.01$.

Panel A: True Effect (Comparing 3 vs 2 Absences on the Dashboard)
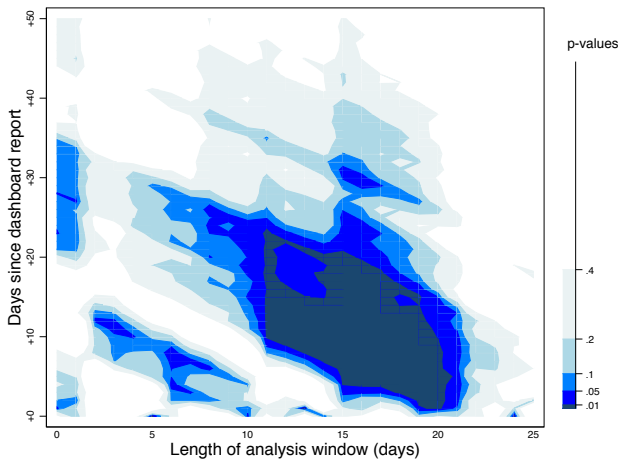
Panel B: Placebo (Comparing 2 vs 1 Absences on the Dashboard)
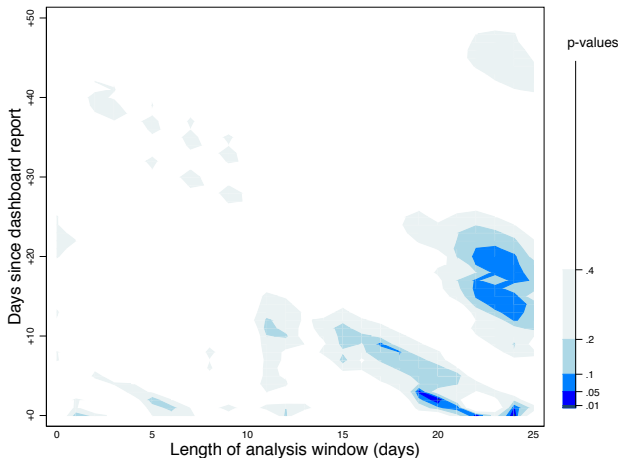
Plan

Direct Policy Conclusions

▶ A cheap, scaleable and replicable intervention substantially reduced a highly persistent problem, though this may be short-lived.

▶ Even a simple nudge (highlighting underperformance in red), can reduce absence rates

▶ Activating the existing monitoring network, we were able to save substantially on implementation costs

General Conclusions

▶ Evidence that both public sector jobs and reporting requirements subject to political interference

▶ Effectiveness of the intervention is related to local politics

▶ We observe persistent absence in many contexts, there might be a political reason for this

▶ Reforms which constrain the availability of rents for politicians to distribute as patronage can improve service delivery