

Improving Police Performance in Rajasthan, India: Experimental Evidence on Incentives, Managerial Autonomy and Training

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ONLINE APPENDIX

TABLE A1—ATTRITION IN THE POLICE SURVEY

No transfer	0.348	[0.277,0.418]
Duty rotation, weekly off	0.397	[0.315,0.478]
Community observer	0.290	[0.202,0.377]
All interventions	0.396	[0.326,0.465]
Control	0.457	[0.382,0.532]
Percentage staff trained	-0.0244	[-0.109,0.0598]
Observations	1556	

95% confidence intervals in brackets

TABLE A2—PROGRAM EFFECTS ON CRIME

	(1) Endline only	(2) Endline only	(3) Station FE	(4) Station FE
All interventions	0.00213 (0.00880)	0.00336 (0.00825)	0.00131 (0.0102)	-0.00155 (0.0105)
No transfer	0.0133 (0.00849)	0.0118 (0.00810)	0.00776 (0.0119)	0.00721 (0.0121)
Duty rotation, weekly off	0.0141 (0.00980)	0.0131 (0.00968)	0.0124 (0.0127)	0.00840 (0.0142)
Community observer	-0.00218 (0.00924)	-0.00192 (0.00906)	0.000459 (0.00945)	-0.00151 (0.0103)
Percentage staff trained	0.0105 (0.00847)	0.00990 (0.00855)	0.0156 (0.0119)	0.0139 (0.0127)
In study	-0.0124 (0.00990)	-0.0119 (0.00975)		
Observations	15594	15550	22771	21900
R^2	0.021	0.028	0.001	0.008
District FE	Yes	Yes	No	No
Station FE	No	No	Yes	Yes
Victim characteristic controls	No	Yes	No	Yes
Baseline/control mean	0.0824	0.0823	0.0776	0.0786

Standard errors in parentheses clustered by police station. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$ All tables report results of the linear probability regression on an indicator variable equal to one if the respondent was a victim of a crime. Victim characteristics are as defined in the notes to Table 9.

TABLE A3—PROGRAM EFFECTS ON POLICE AWARENESS OF VICTIMS' CRIMES

	(1) Endline only	(2) Station FE
All interventions	0.0205 (0.0363)	0.0746 (0.0759)
No transfer	0.0107 (0.0301)	0.110 (0.0736)
Duty rotation, weekly off	0.00924 (0.0373)	0.0836 (0.0837)
Community observer	-0.0503 (0.0322)	0.0413 (0.0915)
In study	0.0697 (0.0522)	
Percentage staff trained	-0.0897 (0.0324)	-0.0436 (0.0450)
Prior decoy visits	-0.0104 (0.0123)	-0.0133 (0.0144)
Observations	1567	2062
R^2	0.252	0.245
District FE	Yes	Yes
Station FE	No	Yes
Crime and victim controls	Yes	Yes
Date of crime controls	Yes	Yes
Baseline/control mean	0.271	0.277

Standard errors in parentheses clustered by police station. All columns report linear probability regressions on an indicator for whether the victim reported non-missing data on satisfaction with the police. Victim characteristics: age and gender of the respondent, education and dummies for the occupation of the head of household, indicators for caste or Muslim religion, and indicators for motorcycle ownership. Date of crime controls include dummies for month of crime.

TABLE A4—DECOY INTERVENTION EFFECTS ON VICTIM SATISFACTION

	(1) District FE	(2) District FE	(3) District FE	(4) District FE
All interventions	-0.399 (0.262)	0.126 (0.573)		
No transfer	-0.307 (0.214)	0.444 (0.434)		
Duty rotation, weekly off	-0.458 (0.233)	0.0451 (0.429)		
Community observer	-0.532 (0.311)	0.149 (0.668)		
Percentage staff trained	0.217 (0.207)	-0.249 (0.464)		
Prior decoy visits	0.160 (0.103)	0.192 (0.164)	0.179 (0.0983)	0.226 (0.153)
In study	-1.022 (0.693)	-1.911 (0.989)	-1.201 (0.590)	-1.453 (1.002)
Observations	62	62	62	62
R^2	0.478	0.714	0.398	0.651
District FE	Yes	Yes	Yes	Yes
Crime and victim controls	No	Yes	No	Yes
Date of crime controls	Yes	Yes	Yes	Yes
Baseline/control mean	0.214	0.214	0.214	0.214

Standard errors in parentheses clustered by police station. The outcome variable in all columns is an indicator equal to 1 if the crime victim reports being satisfied or very satisfied with the police handling of the case. Sample limited to males aged 20-60 who reported crimes of theft, burglary, or sexual harassment to the police themselves. Victim characteristics: age and gender of the respondent, education and dummies for the occupation of the head of household, indicators for caste or Muslim religion, and indicators for motorcycle ownership. All regressions include controls for the crime rate in 2005 and whether the station is urban or rural. Date of crime controls include dummies for month of crime.

TABLE A5—DECOY ROLL-OUT BALANCE CHECK

	(1) Order of decoy visits	(2) Order of decoy visits	(3) Order of decoy visits	(4) Order of decoy visits
Crime in 2005	-0.0120 (0.0108)			-0.0130 (0.0127)
Number of staff in 2006	-0.140 (0.161)			-0.101 (0.169)
Urban	-0.624 (3.581)			-1.253 (3.652)
Semi-urban	-0.367 (3.652)			-0.273 (3.516)
Extremely polite on first visit		0.931 (2.776)		-0.142 (2.801)
Registered case on first visit		0.717 (2.098)		1.061 (2.078)
All interventions			-1.462 (3.107)	-1.647 (3.103)
Duty rotation, weekly off			-7.967 (3.372)	-7.958 (3.389)
Community observer			-2.928 (3.039)	-2.743 (3.056)
No transfer			-1.934 (2.979)	-1.635 (2.978)
Percentage staff trained			-3.185 (2.770)	-2.108 (2.909)
Observations	788	788	788	788
R^2	0.666	0.665	0.667	0.667
District FE	Yes	Yes	Yes	Yes
Month FE	Yes	Yes	Yes	Yes

Standard errors in parentheses clustered by police station. The outcome variable is the order in which police stations were visited by decoy surveyors within each round of surprise visits to police stations by surveyors. All regressions include a control for the 5th round in which fewer stations were visited due to resource constraints.

TABLE A6—POLICE SUSPICION OF DECOY SURVEYORS

	(1) Case registered	(2) Police were very polite	(3) Police Suspected Decoy
Police Suspected Decoy	0.0856 (0.047)	0.0801 (0.034)	
Number of decoy visits	0.229 (0.088)	0.116 (0.051)	-0.00270 (0.075)
Surveyor's decoy visits/10	0.0241 (0.014)	0.0143 (0.011)	-0.00239 (0.011)
Observations	788	788	788
R^2	0.140	0.085	0.016
Station FE	Yes	Yes	Yes
Month FE	Yes	Yes	Yes
Mean with no suspicion	0.519	0.0943	0.193

Standard errors in parentheses clustered by police station. All columns report estimates of the linear probability model on the outcome of the surveyors' visits to police stations to attempt to register a case. In column 1 the outcome is an indicator equal to 1 if the police were willing to register a case based on the surveyor's complaint. In column 2 the outcome is equal to 1 if the surveyor perceived the police as very polite. In column 3 the outcome is equal to 1 if the surveyor thought police were somewhat or very suspicious that he was a decoy. All regressions include indicator variables for the crime story that the decoy surveyor attempted to report and the month of the intervention.

TABLE A7—DECOY SURVEY GEOGRAPHIC SPILLOVERS

	Case registered		Police were very polite	
	(1)	(2)	(3)	(4)
Percentage staff trained	0.0803 (0.064)	0.219 (0.115)	0.0855 (0.041)	0.194 (0.087)
Recent decoy visits in 60 kms.	-0.0202 (0.008)	-0.0136 (0.011)	-0.00497 (0.007)	-0.0161 (0.009)
Recent decoy visits in district	0.00990 (0.006)	0.00329 (0.009)	0.00363 (0.005)	0.0124 (0.007)
Number of decoy visits	0.209 (0.067)	0.210 (0.088)	0.0837 (0.045)	0.118 (0.049)
Observations	788	788	788	788
R^2	0.189	0.148	0.120	0.121
District FE	Yes	No	Yes	No
Station FE	No	Yes	No	Yes
Controls for police suspicions	Yes	Yes	Yes	Yes
Control mean at first decoy visit	0.480	0.480	0.200	0.200

Standard errors in parentheses clustered by police station. All columns report estimates of the linear probability model on the outcome of the surveyors' visits to police stations to attempt to register a case. In columns 1 and 2 the outcome is an indicator equal to 1 if the police were willing to register a case based on the surveyor's complaint. In columns 3 and 4 the outcome is equal to 1 if the surveyor perceived the police as very polite. Recent decoy visits denote visits completed in the last 3 days, regardless of outcome. All regressions include controls for the month, the number of visits previously performed by the surveyor, the crime story used, and whether the surveyor thought police were somewhat or very suspicious that he was a decoy.

TABLE A8—CORRELATES OF IMPLEMENTATION PERFORMANCE

	(1) Community observer attendance	(2) Day off in last week	(3) Knows next duty	(4) Fraction staff transferred	(5) Fraction staff transferred
District chief from state cadre	0.0932 (0.169)	0.159 (0.123)	-0.110 (0.171)		0.138 (0.0602)
Station chief has Inspector rank	-0.0188 (0.0373)	-0.0374 (0.0934)	-0.107 (0.104)	0.00271 (0.0498)	-0.0771 (0.0520)
Number of staff in 2006	0.00227 (0.00195)	0.00460 (0.00474)	0.000195 (0.00508)	0.00195 (0.00216)	0.00212 (0.00237)
Log police station area pop.	0.0168 (0.0323)	0.0141 (0.0576)	-0.00211 (0.110)	0.0154 (0.0250)	-0.0321 (0.0307)
Urban	-0.0674 (0.0417)	0.0313 (0.0899)	-0.0953 (0.0959)	-0.0560 (0.0432)	-0.0239 (0.0437)
Semi-Urban	0.0315 (0.0476)	-0.0865 (0.0812)	-0.203 (0.0965)	0.0416 (0.0310)	0.0290 (0.0377)
Crime in 2005 (100s)	-0.0621 (0.0164)	0.0111 (0.0293)	0.0562 (0.0387)	-0.00753 (0.0211)	0.0383 (0.0227)
Months elapsed between staff rosters				0.0261 (0.0138)	-0.0576 (0.0131)
Observations	274	540	540	120	120
R^2	0.112	0.085	0.096	0.558	0.268
District FE	Yes	Yes	Yes	Yes	No
Month FE	Yes	Yes	Yes	No	No
Mean of outcome	0.0949	0.348	0.494	0.203	0.203

Standard errors in parentheses clustered by police station. Observations in each column are limited to the police stations in which the relevant interventions were supposed to have been implemented. The outcome in column 1 is based upon the reports of surveyors making surprise visits to police stations. Outcomes in columns 2 and 3 are based upon interviews with 2 constables during these random checks. Columns 4 and 5 are based upon comparisons of staff rosters before and after the project. In columns 4 and 5 we redefine the district police chief cadre variable to be the fraction of the period between the receipt of the initial and final staff rosters during which state-level police officers were leading the district.

TABLE A9—PROGRAM EFFECTS ON FEAR OF POLICE /LABELFEARTABLE

	(1) /parbox[t].75 in/centering Open-ended poli
All interventions	0.0280 (0.047)
No transfer	0.0106 (0.050)
Duty rotation, weekly off	0.00387 (0.052)
Community observer	0.0419 (0.056)
Percentage staff trained	0.00716 (0.044)
Observations	7343
R^2	0.002
Station FE	Yes
Ctrls for HH chars., // victim/arrested, // opinion source	No
Baseline/control mean	0.853

Standard errors in parentheses clustered by police station.

Control variable details listed in notes of Table 6