

Rajasthan Police Performance and Perception Intervention

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Over the last decade, research on economic development has increasingly focused on the importance of good governance, both as a precondition for economic development as well as a major factor directly affecting human welfare. Of all government functions, perhaps the most central is to ensure the safety of its citizens, and this in turn is the domain of the police. In order for police to function effectively they must be both successful in performing their traditional tasks of maintaining law and order and investigating crimes, as well as gain the trust and understand of the public. Yet in many developing countries, the police are not nearly as effective as they could be: problems such as inefficiency, corruption, and an insular police culture both reduce police performance and create negative public perceptions.

In their effort to improve the professionalism, transparency and responsiveness, the Rajasthan Police undertook a comprehensive reform initiative targeted at various aspects of policing in the state. Although previous reform programs had been attempted, their results were never clear, due partly to the lack of quantitative outcome indicators, and partly to the fact that the programs were administered selectively to police stations that tended to differ from the average. Having recognized these problems, the Rajasthan Police contacted the directors of the Abdul Latif Jameel Poverty Action Lab at the Massachusetts Institute of Technology, and proposed a collaborative research project. Primarily focused at police station level reforms this project aimed to develop and evaluate a set of police reforms with following objectives:

1. Enhance police performance
2. Improve public opinion
3. Gather objective information about crime rates and police performance.

Interventions

The project started in Sept 2005 with a preliminary survey to identify the problem areas. In depth interviews were conducted with police officers of all ranks, constabulary, members of public including slum dwellers, shop keepers, lawyers, judges, executive magistrates, media etc. The reports of various police commissions as well as available literature on police reforms were extensively consulted. The survey indicated that police is often seen as corrupt, lazy and arbitrary by public. Besides this, the self-perception of police was also found to be negative as they themselves felt overworked, unappreciated and victims of political manipulation. The

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deliberations following the result of survey led to the identification of the following interventions:

1. **In-service training program:** This included modules on:
 - a. Professional enhancement of investigating officers with inputs on improving the competence level and use of scientific techniques.
 - b. Improving public relations with inputs on ‘soft skills’ such as communication, mediation, stress management, motivation, team building, leadership, attitudinal change, nutrition, health etc.
2. **Community Observers:** Introduced for the first time, the community observers were local volunteers chosen to sit in the police station for approximately three hours in the morning and evening (peak hours), with the sole purpose of observing the activities within the police station. The presence of the observer would have many positive impacts: increasing public awareness of the roles of the police, improving police behavior, and encouraging citizens to visit the police station.
3. **Weekly day off and Duty roster system:** Under this, the entire staff in selected police stations (except the SHO) received one day off every seven days. In addition, each person was given the opportunity to perform all the duties at the police station on a roster basis. The goal was to create a transparent and fair system of work allocation that would lead to lower stress, more flexibility, reduced corruption, better informed constabulary and higher overall productivity.
4. **Freezing of transfers:** All administrative transfers in the police stations were prohibited for a period of one and half years since frequent transfers (due to outside interference) had adverse effect on professional and family lives of police personnel.

The choice of the above mentioned reform initiatives was done keeping in mind their cost-effectiveness, simplicity (as they were to be implemented by chief officers of various police stations), sustainability and the fact that they were capable of generating evidence of success. In Feb 2006, J-PAL researchers and the police launched a pre-pilot experimentation of these initiatives in eleven police stations in Jaipur North, Jaipur East, Jaipur Rural and Sikar districts. After three months of successful execution, these initiatives were further scaled up to 150 police stations in eleven districts across Rajasthan: Ajmer, Alwar, Barmer, Chittorgarh, Pratapgarh, Dholpur, Hanumangarh, Jaipur City East, Kota City, Nagaur, and Udaipur for a period of one and a half years.

During the course of this project, around 350 investigation officers (Inspectors, Sub Inspectors and ASIs) were trained on a weeklong module at Rajasthan Police Academy Jaipur for improving their skills on investigation. Also, 2000 police personnel (all ranks) were trained on soft skills, via a three-day module, to improve public relations with the help of IL&FS (ETS).

Public Opinion Results

This section of the project report describes the findings of the Rajasthan Police reform project on public opinion of the police, including the opinion of crime victims. We find that the training of officers in investigation techniques and all staff in communications and public relations increased the satisfaction of crime victims and reduced the likelihood that citizens reported fearing the police. Similarly, the freezing of transfers also had a positive effect on both reducing fear of the police and on the level of satisfaction of crime victims.

Specifically:

- In stations where everyone was trained 16% fewer respondent reported fearing the police than in control stations
- In stations where everyone was trained, 31% more crime victims reported to be fully or mostly satisfied with the police.
- In stations where transfers were frozen, 19% fewer respondent reported fearing the police than in control stations
- In stations where transfers were frozen, 30% more crime victims reported to be fully or mostly satisfied with the police.
- With the exception of a few isolated questions, the other interventions did not appear to affect police's public image

Project Effects on General Public Perception of Police

Our primary means of measuring changes in the public opinion of the police due to the reform project is via a public opinion survey administered to 7,981 randomly selected individuals, 2,451 in the spring of 2007 and 5,530 in the spring of 2008. This survey collects basic demographic information on the respondent, and asks a series of questions about how they perceive police effectiveness, control of crime, and other issues. Of these questions, 14 of the most pertinent have been combined into four broad categories: Responsiveness of police to citizens, fear of police, corruption, and amount of police resources. The grouping of the questions is as follows:

- A. Responsiveness of police to citizens:
 1. How do the police behave with normal citizens?
 2. Do the police help citizens when they are required?
 3. How quick is the police response to distress calls by citizens?
 4. How does the police's performance compare to other government agencies, for instance roads or schools?
- B. Fear of police:
 1. Do you think that citizens like yourself are afraid of the police?
 2. Are law-abiding citizens afraid of the police?
 3. When asked how the population thinks of the police, whether respondent volunteers that "They fear them".
- C. Corruption

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1. Would you say that the police in your area are generally honest or generally corrupt?
 2. Is it necessary to pay the police some money in order to get them to do their job?
 3. Do policemen violate the law more or less than the average citizen?
- D. Amount of police resources:
1. Do the police have enough personnel to do the work required of them?
 2. Do the police have enough money and resources to do the work required of them?
 3. Should the size of the police force be increased, decreased, or stay the same?
 4. Do you think that the government should spend more money on the police, even if it means spending less on things like education and roads?

Agglomerating the 14 questions into 4 categories focuses the analysis on the broad dimension of public opinion that the project was designed to influence, and ensures that the results we find reflect the real effects of the project. The possible downside to this approach lies in the fact that the categories grouping required some choice. Although these changes appear reasonable and our analysis is robust to them, one could conceive of other groupings. Table 1 displays the effect of each reform on each category, controlling for a variety of individual, district, and police station level variables. The results are expressed in standardized effect size. Values in parentheses give the probability that the project had a positive effect. Results in bold are those for which we are very confident that the project was indeed effective.

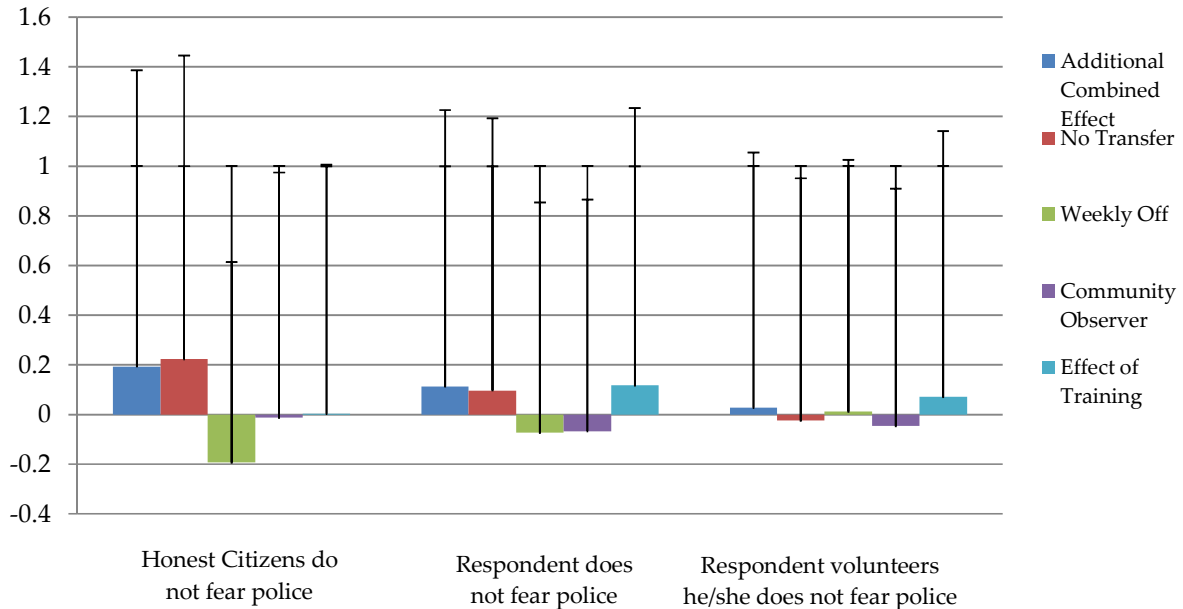
Table 1				
	Dimension of public opinion			
	Responsiveness of police	Fear of police	Corruption	Amount of police resources
Combined effect of all interventions	-0.003 (0.062)	0.163 (0.972)	0.042 (0.43)	0.089 (0.707)
No Transfer	0.013 (0.144)	0.198 (0.995)	0.028 (0.296)	0.041 (0.392)
Weekly Off/Duty Rotation	0.141 (0.96)	0.034 (0.339)	-0.055 (0.522)	-0.018 (0.182)
Community observer	0.119 (0.87)	0.098 (0.817)	-0.041 (0.369)	0.086 (0.724)
Percent Trained	0.046 (0.525)	0.113 (0.925)	0.107 (0.891)	-0.02 (0.278)

Of the 4 categories, the only ones in which the project shows any significant effect at the 95% level are the “Fear of Police” and the “Responsiveness of Police” (in the case of the Weekly Off/Rotation intervention). Both the “No transfer” stations and the stations with the staff training all demonstrate a higher level of public trust of police thanks to the intervention.

To make it easier to see what these effects cover, figure 1 below shows the effect of each reform on the individual questions that were used to construct the category “fear of the police”.

Figure 1

Effect of Interventions on Individual Fear of Police Questions - Difference from Control



Interpreting the effect of training is straightforward: It seems that the public relations training imparted to station staff was successful in changing their behavior in a manner that made them less intimidating to the public.

The effect of the freeze on transfers might work through a variety of mechanisms. Perhaps due to less frequent transfers the public became more familiar with the same police officers and constables they therefore came to trust them more and fear them less. Alternatively, it is possible that once the police staff remained in a posting for a longer period of time, their behavior changed with respect to the inhabitants of that area and they became more approachable and less intimidating to the population.

The negative effects of the weekly off/duty rotation are such that they almost cancel out the positive effects of the freeze on transfers on public opinion in those police stations that implemented only those two interventions. A possible explanation for this negative interaction might be that the duty rotation, by moving staff from post to post within the police station, prevents the development of public/police familiarity that is means by which the freeze on transfers reduces fear of police.

The results for the specific questions highlighted in table 2 support the conclusions reached earlier for the broader dimension of public opinion in several ways:

Table 2 Effect of project on Public Opinion: Individual Questions				
	Police are always or mostly courteous	Citizens do not fear the police	Police are generally honest	Police force should get more money

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Additional combined effect of all interventions	-0.14 (94%)	0.20 (98%)	-0.21 (100%)	0.06 (57%)
No Transfer	-0.01 (15%)	0.22 (100%)	0.05 (62%)	0.09 (91%)
Weekly off/Duty rotation	0.07 (82%)	-0.19 (100%)	0.06 (78%)	-0.09 (86%)
Community Observer	0.09 (89%)	-0.01 (22%)	0.13 (99%)	0.02 (35%)
Percentage Trained	0.04 (61%)	0.00 (2%)	0.01 (19%)	0.05 (67%)

Looking at these questions individually generally confirms the conclusion that there was no effect of the interventions on other categories. The seemingly large and significant negative effect on perceived honesty of combining the interventions is due to the cumulative effect of the interventions in the “All Interventions” police stations—with this negative interaction term the total difference between these police stations and the control is $.05+.06+.13-.21=.03$, and thus neither qualitatively nor quantitatively significant. One exception is that the community observer intervention may have increased the perception that the police was honest, but this effect does not appear in the other police honesty-related questions, and may therefore be due to chance, rather than to a real effect.

Reporting of Crimes, Satisfaction with Investigation

In addition to the data on public satisfaction gathered from the public at large, all crime victims were asked whether they were satisfied overall with how the police had handled their case:

In this entire case how satisfied were you with the police?	Year	
	2007	2008
Completely satisfied	19.05	11.86
Satisfied	14.97	12.63
Unsatisfied	23.81	24.23
Completely unsatisfied	38.1	40.98
Don't know/Case not finished	4.08	10.31

Although the large decrease in satisfaction shown in table [x] also reflects the fact that the endline survey was conducted more intensively in districts where respondents were less satisfied, these results are robust to controlling for this factor. Overall the overall proportion of respondents saying they are “Satisfied” or better with police performance fell by approximately 9.5%, a result significant at 93% probability in the full sample.

The reasons for dissatisfaction appear to be the relatively unchanged.

Reason that victim is unsatisfied with police response:	Year	
	2007	2008
The police didn't do anything special	27%	25%
The police didn't take interest	25%	23%
The criminal was not searched or arrested	14%	17%

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They were unable to return the lost property	12%	13%
They didn't give information in the proper manner	1%	3%
They didn't behave properly in a civilized manner	7%	6%
Arrived late	3%	3%
Asked for money for the investigation	6%	6%
Other	5%	4%
Don't know	0%	0%

Table 4 suggests that it is the lack of perceived interest in their crimes that generates the greatest public dissatisfaction with the police. According to these responses, it is not so much the lack of successful resolution of their grievances that citizens seem to mind; rather it is the lack of a credible police effort to address the problem.

This observation suggests that in cases where the police have shown some interest in the victim, the level of satisfaction should be higher. And indeed, this does appear to be the case.

Table 5			
Variable	Effect on probability that victim is satisfied with police:	Probability that the variable has a positive effect on satisfaction:	
Dealings with Police:			
Police made an arrest	23%	100%	
Police recovered property	51%	100%	
Police contacted victim again	10%	97%	
Victim contacted police again	-11%	99%	
Police asked for bribe	-19%	100%	
Type of Crime:			
Relative to theft of a 2-wheeler	Attempted Burglary	-17%	84%
	Bicycle Theft	-3%	17%
	Burglary	-5%	37%
	Attempted Burglary	-9%	52%
	Vandalism	-22%	94%
	Trespassing	-8%	57%
	Robbery/Dacoity	9%	62%
	Thefts	5%	35%
	Sexual Assault/Molestation	-14%	78%
	Eve Teasing	-31%	100%
	Hurt/Grievous Hurt	62%	100%
	Extortion	91%	100%
	Criminal force/Assault	-11%	67%
	False Cases	-8%	58%
Other	-12%	62%	
Area:			
u ru ral	Semi-Urban	8%	77%

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	Urban	-2%	43%
Date:			
Case occurred in 2008		-7%	83%
Information about Respondent:			
Relative to general caste	OBC	-10%	92%
	SC	-10%	81%
	ST	-9%	73%
	Muslim - General	-22%	97%
	Muslim – OBC	-6%	45%
Owens 2-wheeler		-10%	99%
Owens 4-wheeler		-9%	92%
Is a laborer		16%	100%

Table 5 presents the results of a multidimensional analysis of the factors determining satisfaction with police performance on the part of crime victims. The greatest impacts on public satisfaction come from police performance—when the police arrest a suspect satisfaction increases by 23% and when they recover property the probability of satisfaction increases by 51%. But even controlling for the actual outcome of the investigation, the amount of interest that the police show in the case seem to matter as well: respondents are 10% more satisfied when the police contact them to follow up on the case, and 11% less satisfied when they contact the police again themselves. Not surprisingly, respondents are 19% less likely to be satisfied when the police ask for a bribe.

Victims of extortion and hurt or grievous hurt are most likely to be satisfied with police work, while victims of eve-teasing and vandalism are least likely. Non-OBC Muslims are substantially (22%) less likely to be satisfied. Interestingly wealthier victims (measured by their vehicle ownership) were less likely to be satisfied with police efforts than agricultural laborers, who would tend to occupy a lower economic class in society. The gender of the victim (16% of crime victims are women) also seems to have no effect on the level of satisfaction.

Effects of the Project:

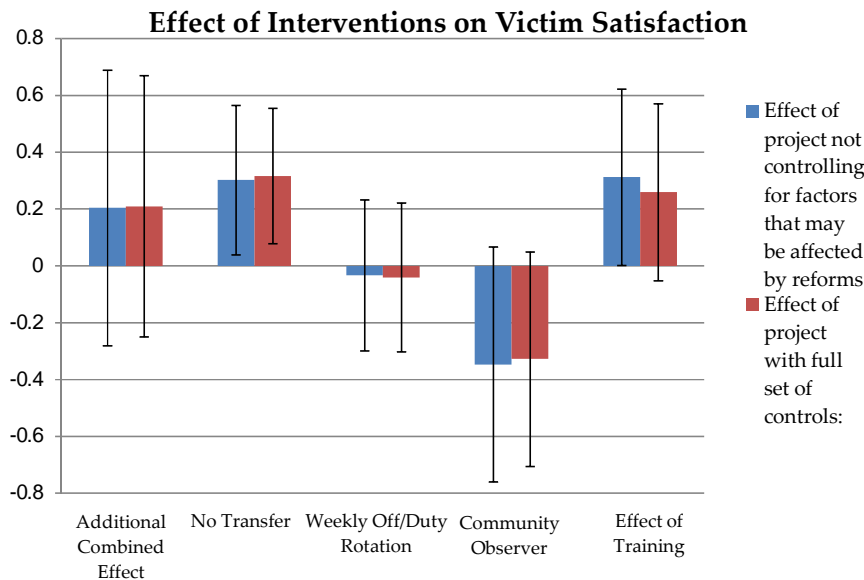
In order to correctly estimate the effects of the police reform project, we must separate any changes in victim satisfaction due to the project itself from any broad time trends or underlying differences between police stations that have no bearing on the police project. We accomplish this through the same multidimensional analysis as above.

First, we note that it appears that, in the stations where there was no program, the satisfaction of crime victims declined significantly. If the project had not happened, we would have seen a 37% decline in victim satisfaction, and that the project helped reduce that.

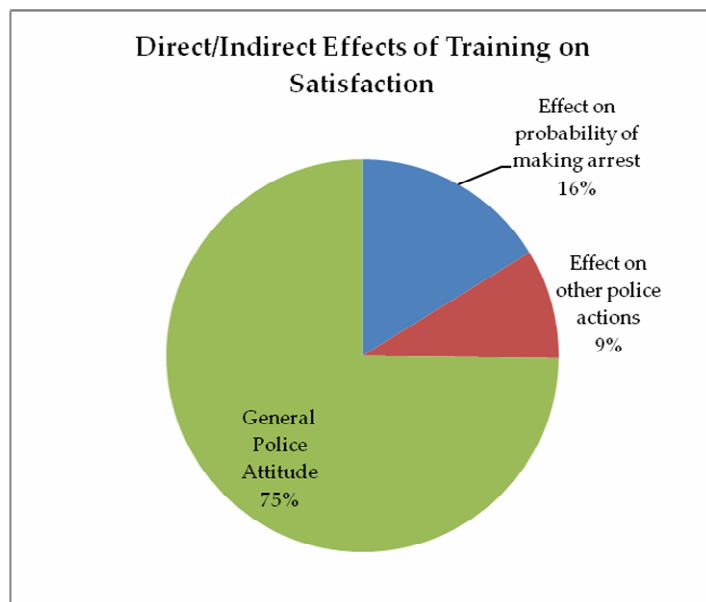
Finally, and most interestingly, the freeze on transfers and training program had large impacts on the satisfaction of crime victim. The effect of going from 0% trained officers to 100% is to raise the probability that victims are satisfied with police investigation by 31 percentage points, and the freeze on transfers increases satisfaction by 30 points. Since on average only

27% of victims report being entirely or partially satisfied, these changes represent a more than twofold increase in satisfaction.

Figure 2



Many of the variables included in the survey of public satisfaction may themselves be outcomes of the training. For instance, the investigation training may have lead officers to make more arrests, or to carry out more follow-up visits to the victims. We can test this by measuring the impact of the project on what actions the public reports that the police have taken after a crime has occurred. When we do so we find a significant impact of the training program on the probability that the police make an arrest: going from 0% to 100% training in a police station increases the probability of making an arrest by 26% (statistically significant at the 96% level).

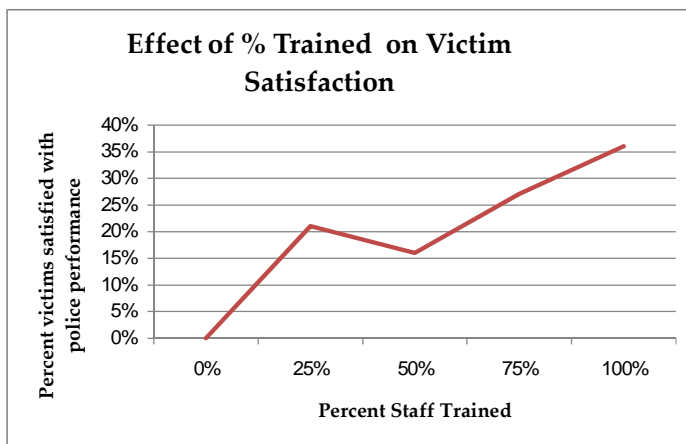


Furthermore, when we generate an index for whether the victim saw police take any positive action at all after the crime, including arrest, property recovery, collecting evidence, interviewing witnesses, etc., the effect of the training on police action

increases to 30% (significant at 97% level). If arrests are removed from the index of actions, then the effect of training drops to 22% and it is only significant at the 90% level. (Note that all of these results include controls for crime type, district, and personal characteristics of the crime victim).

We can take advantage of the variation in percentage of staff trained per police station to investigate this outcome further. Figure 3 shows the magnitude of the effect on victim satisfaction broken in police stations with different fractions of trained staff. The level of satisfaction increased with the proportions of trained staff. The 75% and 100% trained station effects are statistically significant at the 10% level, although none of the effects are statistically different from each other.

Figure 3



Thus it appears that the training program had two effects on police performance: First in that it encouraged the police into more active investigation of crimes, and second that it made crime victims more satisfied with the performance of the police, regardless of whether the police took action or were successful in arresting a suspect or recovering property. This is likely to be due to better treatment of the crime victim by the police.

Conclusion:

The results of the Rajasthan Police project demonstrate that it is possible to affect the public image of the police in a relatively short period of time, using an affordable and easily implementable set of interventions. Training police staff in investigation techniques and public relations is shown to both reduce fear of the police and increase the satisfaction of crime victims. Furthermore, it appears to have a real impact on the actions of the investigating officers, causing them to arrest more suspects and take more actions subsequent to the registration of an FIR (at least according to the victim's perception). Freezing transfers of investigating officers also has

an effect on public opinion, causing a decrease in the number of respondents claiming to fear the police as well as increasing victim satisfaction. While the mechanism behind the effect of the freeze of transfers is less obvious, it suggests that increasing the posting period of police staff can have positive effects that are detectable by the public, and suggests that rapid transfers have a cost in terms of public opinion.

Effects of Rajasthan Police Reform Project on Police Moral and Performance

Survey Methodology:

One of the primary goals of the Rajasthan Police Reform project was to increase performance of the police by improving the efficiency, moral, and public relations of the staff posted to police stations. In order to measure these outcomes, the Rajasthan Police/JPAL team surveyed one half (chosen randomly) of all staff posted to the police stations in the project or control groups. This police moral/performance survey was conducted in two rounds, one prior to the beginning of the project (January-April, 2007) and one subsequent to its completion (March-April, 2008). In total, 2367 different officers were surveyed, of whom 948 were interviewed twice: once in the baseline and again in the endline.

An important difference between the baseline and endline rounds of the opinion survey was that the baseline survey was conducted by surveyors who had no experience interacting with the police, while at the time of the endline the surveyors had spent over a year interacting with the police as part of their ongoing monitoring of the implementation of the project. This difference appears in the responses of the police personnel to many of the opinion questions: on average, the police appear less satisfied by their jobs, less interested in becoming close to the public, and more comfortable with police brutality in the endline than in the baseline. While this variation could be caused by true changes in opinion over the course of the year, it seems likely that the degree of comfort that the police felt with the interviewer also contributed greatly to the change over time. Nevertheless, since this effect should be constant across both treatment and control police stations, this change will not affect the accuracy of the evaluation of the results of the project.

Another, more serious concern with the results of the police survey stems from the high number of transfers among the police staff. Due to these transfers, only 60 percent of individuals interviewed in the baseline could be re-interviewed in the endline. As expected, retention in the survey is affected by the no-transfer intervention (in control group stations only 52% were re-interviewed), thereby raising the possibility that the sample of officers included in the final survey differs across treatments in important but unobservable characteristics.

Police Job Satisfaction:

Perhaps the most direct means to measure police morale is the simple question, “How satisfied are you with your job as a policeman?” When we asked this question at the endline, the answers, on a scale of 1 to 10 with 10 being the most satisfied, were distributed as follows:

Figure 4



Thus while satisfaction appears high (average rating of 7.6) there is substantial variation in the ratings given by different respondents. The following graph illustrates the effect of the effect of the program on the satisfaction ratings given by police:

Figure 5

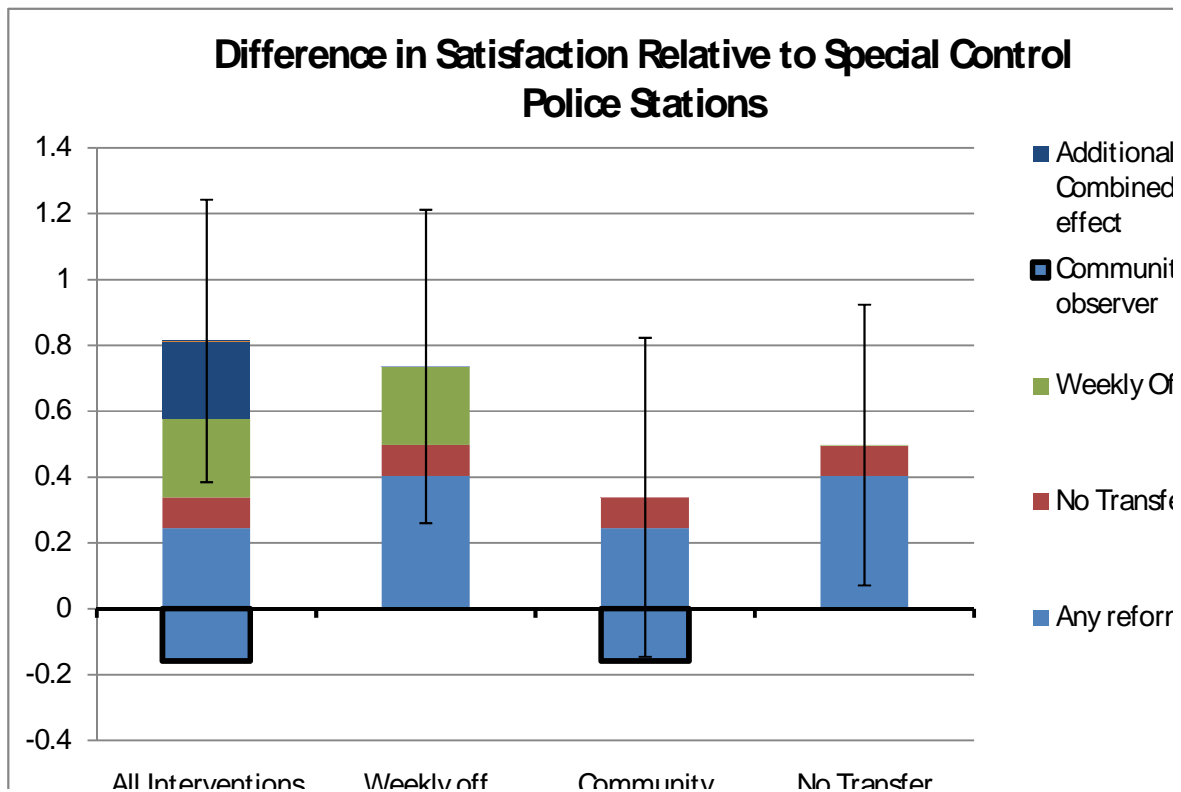


Figure 5 demonstrates that, with the exception of the community observer police stations, all types of intervention caused police to report higher levels of satisfaction than the

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special control police stations. However, as the figure demonstrates, for many of the intervention types, the bulk of the effect is due simply to the fact that there was *any* reform project going on. This implies that the “Control” police stations, where the staff knew that their progress was being monitored as part of the reform project, reported significantly higher satisfaction than the “Special Control” stations where the staff did not know of their involvement in the project until the endline. A possible explanation for this effect would be if police staff genuinely appreciate that the Rajasthan Police is making efforts to improve its performance. Alternatively, staff in project police stations may simply feel that they should report high satisfaction levels in order to appear supportive of the project.

Two other interventions showed substantial effects: the Weekly off/Duty rotation and the combined, All Interventions police stations both showed higher satisfaction than the police stations in the control. (For Weekly off/Duty rotation the significance is at the 91% level). Thus it appears that the Weekly Off/Duty rotation, both individually and to a greater degree when combined with other interventions substantially increased staff satisfaction.

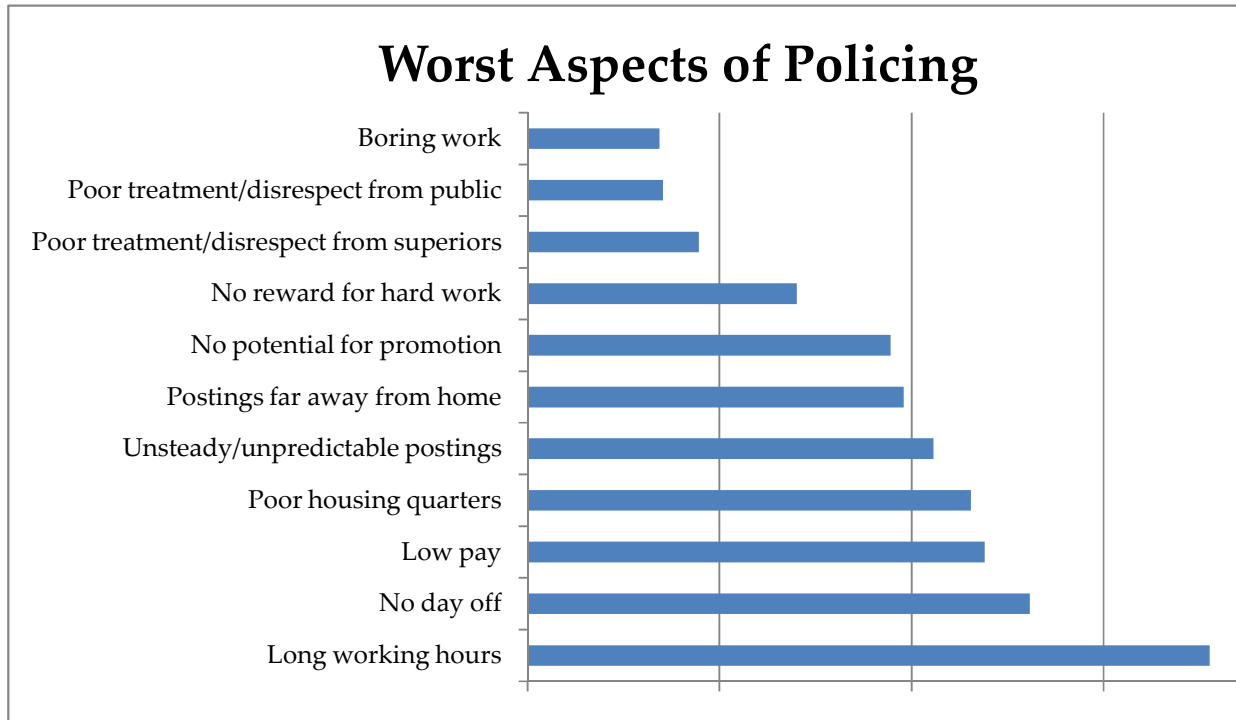
In addition to the differences in satisfaction caused by the project, several other factors consistently affected staff satisfaction levels. The most significant among these was the number of years that an individual has served in the police: the longer he or she has served, the higher satisfaction he or she reports. In addition, the longer it has been since the officer or constable met the SP, the less satisfied that individual is. While this result suggests that greater supervision from senior officers increases satisfaction, it might also be a result of the fact that more remote police stations, where the staff is already less satisfied, are visited less frequently by the SP.

Interestingly, it seems that once all factors are accounted for, there is no significant difference between the satisfaction levels of different ranks. Whether an individual was selected for training also appears to have no significant effect on staff satisfaction, nor does the percentage of other officers in the police station who were trained. In contrast, there was wide variation between the satisfaction level of police staff in different districts, with Jaipur staff being most satisfied and those in Udaipur least.

Staff Complaints

Among the staff who expressed dissatisfaction with their positions in the police, there was substantial variation in the issues cited as the worst aspects of policing. Surveyors asked police officers to list what they perceived as the worst aspects of their job in the police. The surveyors then categorized the responses, which are displayed in figure [X]:

Figure 6



Many of these issues, for instance problems with low pay or low quality housing, are unfortunately outside the scope of the police reform project. For those that were addressed by the reforms, table 6 shows the effect of each reform on the probability that the respondent lists a given issue as one of the worst aspects of policing:

	No day off	Boring work	Long working hours	Poor treatment/disrespect from public	Unsteady/unpredictable postings
Additional combined effect	-0.11 (0.92)	0.02 (0.44)	0.07 (0.79)	0.03 (0.52)	0.03 (0.41)
No transfer	0.02 (0.4)	0.03 (0.69)	-0.03 (0.55)	-0.08* (0.96)	-0.13** (0.99)
Weekly off/Duty rotation	0.04 (0.7)	-0.00 (0.08)	-0.05 (0.71)	-0.03 (0.7)	-0.01 (0.11)
Community Observer	-0.00 (0.07)	-0.03 (0.88)	0.01 (0.27)	0.03 (0.66)	0.01 (0.26)
Any reform project	-0.14** (0.99)	-0.08 (0.93)	-0.05 (0.61)	0.03 (0.44)	-0.00 (0.04)
Percentage of staff trained	0.04 (0.63)	0.00 (0.07)	0.14*** (1)	-0.02 (0.38)	0.02 (0.34)
Whether the staff member received training	-0.00 (0.08)	0.00 (0.07)	-0.06** (1)	-0.00 (0.06)	0.04 (0.86)

In some ways the results are as expected; for instance the freeze on transfers dramatically reduces the probability that staff complain about uncertain transfers.

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Furthermore, the freeze on transfers also seems to reduce complaints of poor relations with the public, re-enforcing the view from the public opinion survey that lengthening posting times may improve relations with the community. Another interesting result pertains to the complaints about long working hours: in stations with higher percentages of trained staff, those staff members *who were not trained* complained much more about long working hours. Thus it seems that sending many staff members away for training, even for short periods, increased the burden on the rest of the staff. Finally, several interventions did not show the desired effects on police complaints: the weekly off/duty rotation had essentially no effect on complaints about lack of days off or boring work, and the community observer program did not seem to reduce complaints about lack of public respect.

Police Opinions

As with the public opinion survey, the core of the police opinion survey consists of many specific questions about different aspects of policing. Due to the large number of these questions, they are grouped into several themes, each incorporating various individual questions as follows:

- A. Measures of public support. Respondent states that:
 - a. The public is very cooperative to the police
 - b. Police staff are respected by the population
 - c. The law-abiding public does not fear the police
- B. Police Brutality. Respondent states that:
 - a. It is never better to beat criminals as punishment (rather than pursue judicial means)
 - b. Third degree methods should not be used to extract information
 - c. Hard-core criminals should never be killed in encounters
- C. Satisfaction with police system. Respondent states that:
 - a. He/she is treated right by superiors
 - b. Duties are allocated in a fair and transparent manner

In addition, we analyze whether police favor specialization or diversity in skills.

Results are listed in table 7:

Table 7				
	Dimension of police opinion			
	Public Support	Police Brutality	Satisfaction with Police System	Whether police favor specialization
Additional combined effect of all interventions	-0.02 (0.15)	0.00 (0.02)	0.08 (0.53)	0.03 (0.43)
No Transfer	-0.06 (0.61)	0.05 (0.67)	0.18 (0.99)	0.05 (0.95)
Weekly Off/Duty Rotation	-0.03 (0.35)	0.06 (0.65)	-0.13 (0.89)	-0.09 (1.00)
Community observer	0.14 (0.98)	-0.01 (0.09)	0.06 (0.57)	0.01 (0.30)
Any reform program	0.00 (0.04)	-0.02 (0.19)	-0.13 (0.78)	0.02 (0.34)
Percent of police station staff trained	0.05 (0.63)	0.03 (0.43)	0.00 (0.07)	0.01 (0.24)
Whether individual was	0.06 (0.78)	-0.10 (0.97)	-0.07 (0.91)	0.01 (0.47)

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trained				
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The first column shows that, as expected, the community observer intervention made police staff give more favorable appraisals of public support for the police. The results for police brutality, however, are perplexing: Officers and constables who underwent the training were *more* likely to give answers suggesting that police beatings and use of third degree methods were acceptable. Since the purpose of the training was to convey the opposite message, these results are difficult to explain. Perhaps they are due to the fact that trained staff feel more comfortable discussing their honest opinions with the surveyors than those that did not go through the training.

The no transfer program appears to have substantially increased the perception that the police system operates in a fair and transparent manner. Interestingly, the no transfer program and the weekly off/duty rotation had opposite effects on the opinions of police staff regarding whether it is desirable or not for officers of their rank to specialize. Those in stations where transfers had been frozen (and therefore the staff may have had a greater chance to specialize) were more in favor of specialization, whereas those in stations where duties were rotated (and where there was less specialization) were more opposed to it, with the latter effect being almost twice as strong as the former. This suggests that either the staff became accustomed to the system in each intervention and began to prefer it, or they felt they should provide answers to interviewer that supported the ongoing reforms.

Knowledge of Duties

One of the major objectives of the duty rotation program was to encourage all staff members to become acquainted with all the duties expected from a police man or woman of their rank. We measured knowledge of duties through two different mechanisms: First, the police opinion survey asked each individual how familiar they felt with each duty. Second, we administered a separate “Duty Quiz” to all constables and head constables, in which we asked them a series of questions of various difficulties about each duty.

In the police opinion survey, constables were asked whether they felt “very experienced”, had “some experience”, “little experience”, or “no experience” in a variety of task including beat patrol, wireless, court l.c., and other common duties. The following table records the effect of the weekly off/duty rotation intervention on constables’ self-reported skill levels:

Table 8		
Number of duties at which respondent is:	Effect of weekly off /duty rotation	Probability that result is not due to random chance
Very experienced	0.155549	70%
At least some experience	0.253009	91%
At least a little experience	0.224802	98%

While the effect of the duty rotation is only significant when we analyze the difference between the number of duties that the respondent has no knowledge of versus those duties in which he/she has at least a little experience, the effect of the intervention is positive for all knowledge levels, suggesting a robust effect. The effect of the community observer intervention is also positive, although never significant.

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Evidence from the duty quiz corroborates this finding: The following table shows the effects of each intervention on the final test score of the constables interviewed in the endline:

Intervention:	Effect on test scores	Probability that result is not due to random chance
Additional combined effect of all interventions	-0.60732	74%
No Transfer	-0.06793	13%
Weekly Off/Duty Rotation	0.734766	94%
Community observer	0.954357	99%
Any reform program	0.613166	66%
Percent of police station staff trained	-0.40171	69%
Whether individual was trained	0.522186	94%

The Weekly Off/Duty Rotation, Community Observer, and Training Program all show positive and significant (at the 6% level) effects on the number of test questions that the constables answered correctly. Interestingly the greatest effect comes from the community observer program, whose original objective was not to affect constable knowledge.

Conclusion and Recommendations:

Perhaps the most striking outcome of the Rajasthan Police project lies not in its effects on police functioning, but in the fact that the program was successfully conceived, implemented, analyzed, and accepted by Indian policymakers and senior police officials. Randomized evaluations of core government programs are rare in developing countries, and even rarer in as politically sensitive areas such as the police. The successful completion of the Rajasthan Police project should both encourage researchers to inquire into the effectiveness of government functioning and governments to experiment with new reforms to their basic services.

In addition, the actual outcomes of the project suggest a series of promising and eminently feasible reforms that the Indian Police could begin implementing immediately:

Recommendations:

- **National Crime Victimization Survey:** A national crime victimization survey carried out every two or three years, helping us identify problem areas as well as providing data that could be used for assessing effectiveness of reform policies. Our survey provides a template for how this can be done
- **Freezing of Transfers:** Increasing transfer time appears to have significant effects on public relations, as well as decreasing staff grievances. Although this is often presented as a politically difficult reform, this project has shown that it is both feasible and beneficial and as such is recommended as a permanent goal.
- **Training:** Both investigation training and public relations training showed positive effects on public satisfaction and crime investigations. These interventions are straightforward to scale up and should be extended to the remaining Rajasthan Police staff.

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- **Weekly Off/Rotation of Duties:** These interventions showed some effect in increasing staff moral and flexibility (in that more staff members were trained for each task). However, these effects did not generate significant changes in more traditional indicators of police performance.
- **Community Observer:** The community observer intervention had no effect on public perception of the police, potentially due to the short duration of the study, or with issues related to implementation. As such it cannot be recommended.