

Political Representation and Crime: Evidence from India*

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WORK IN PROGRESS. COMMENTS WELCOME.

Abstract

We examine the impact of mandated political representation for women in India on crimes against them, using variation in the timing of political decentralization across states. Having female leaders in local government induces a large and significant increase in reported crimes against women, and an increase in the number of people arrested for such crimes. Crimes against men or gender-neutral crimes do not change in the aftermath of this reform. Representation of women at higher levels of government has a much lower additional impact on reported crime. Mandated representation of disadvantaged castes results in a similar increase in the reporting of crimes targeted at these castes.

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1. Introduction

One of the most fundamental aspects of civil society is the assurance of personal safety and fair treatment under the law for *all* citizens. However, protecting the rights of disadvantaged groups, such as population minorities or the politically under-represented, has remained a challenge in many countries. Individuals from such groups are often the target of a whole gamut of injustices ranging from everyday indignities such as verbal abuse to serious crimes including murder and even genocide. In this paper, we examine the effects of a specific policy instrument, mandated political representation for political minorities, on reported crime outcomes against them. We exploit the changes in local political representation of women and other disadvantaged groups induced by a major decentralization initiative in India to examine this issue.

Our paper is the first to examine the effects of mandated political representation for minorities on reported crimes against them. The related economics literature has focused on socio-economic factors influencing crime, ranging from local inequality and economic shocks to peer effects and family structure.¹ Some papers have analyzed the impact of specific policy interventions, such as increased police hiring (Levitt, 2007; Di Tella and Schargrotsky, 2004), prison overcrowding (Levitt, 1995), and, more controversially, legalized abortion (Donohue and Levitt, 2001). Most of these existing analyses have focused on overall crime levels, or on broad crime categories such as property crimes or violent crimes. A few papers have examined crimes against specific sections of society (Miguel, 2005 and Donohue and Levitt, 2001a) or against women (Stevenson and Wolfers, 2006; Aizer and Dal Bo, 2009; Aizer, 2010; Iyengar, 2009)² –

¹ See, for instance, Bloch and Rao (2002), Demombynes and Ozler (2005), Fafchamps and Minten (2006), Kelly (2000) among others.

² Miguel (2005) studies the effect of economic shocks on witch-killing; Donohue and Levitt (2001a) examine the link between the racial profile of police officers and the racial pattern of arrests. Stevenson and Wolfers (2006) study the impact of divorce laws on violence against women, Aizer and Dal Bo (2009) investigate the effect of prosecution no-drop policies on reporting of domestic violence, while Aizer (2010) examines the effect of women's relative

and none have examined the role of political power for minorities on crime outcomes against them.

The number of crimes committed against disadvantaged groups is a broad measure of their welfare as it is a useful barometer of their socio-economic status and level of empowerment in society, beyond the direct reach of government. Security of life and property is often a necessary precondition for the success of other efforts at improving the welfare of disadvantaged groups. However, whether mandated representation of the disadvantaged in politics can help enhance their safety and access to justice is a question that the existing literature has not addressed. The effects of mandated political representation on policy-making have been previously studied in the context of targeted public expenditures (Pande, 2003, Besley et al., 2007), local public good outcomes (Chattopadhyay and Duflo, 2004, Powley, 2007), and attitudes towards women leaders (Beaman et al, 2009). Our paper examines the effect of such political mandates on reported crime, and finds that political representation for women has an important role in increasing women's ability to report crimes committed against them, an important first step in ensuring better access to justice.³

Why would leaders from a specific minority community matter for its welfare?⁴ It could simply be that their life experience as a minority group member gives them a different perspective, which affects their preferences. Furthermore, as voters are unable to enforce full policy commitment on the part of legislators, policy making and implementation reflects the preferences of the leader. As the most recent U.S. Supreme Court appointee Sonia Sotomayor

wages. Iyengar (2009) shows that changing incentives of victims to report crime is an important dimension in assessing the overall effects of any crime-related policies.

³ Two other differences between our work and that of Chattopadhyay and Duflo (2004) and Beaman et al (2009) lie in our use of nationwide data rather than data from a single district, and the examination of women's representation at different levels of government.

⁴ In this paper we use the term "minorities" or "disadvantaged groups" to refer to political minorities or groups which are under-represented in the political sphere.

(2002) has observed, “I further accept that our experiences as women or people of color affect our decisions...Hence, one must accept the proposition that a difference there will be by the presence of women or people of color on the bench. Personal experiences affect the facts that judges choose to see.” Unlike appointed judges, political leaders can retain office only if they keep voters happy. This provides minority leaders more incentives to be responsive to the needs of their largest constituency, i.e. minority voters.⁵ In turn, the presence of a political leader from a minority community can empower members of that community to be more active in ensuring their rights are protected, and to play a bigger role in public life.

To study the effect of political representation for minorities on crime outcomes against them, we outline a basic framework that considers the incentives of three key sets of agents in our context: criminals, victims and law enforcement officials.⁶ We identify two distinct channels for how politician identity may matter for crime outcomes. First, the presence of a minority group politician may increase the likelihood of action by law enforcement officials in cases of reported crimes against that group’s members. The increased likelihood of punishment would serve as a deterrent on the actions of a potential criminal against a minority group member. Second, minority victims may feel emboldened to report crimes against them, when they perceive that the politician in power is more sympathetic to their concerns. Some evidence that the identity of leaders is important in increasing the voice of such disadvantaged members of society is provided in the studies by Chattopadhyay and Duflo (2004), Hoff and Pandey (2006) and Beaman et al. (2010).⁷

⁵ Other dimensions of politician identity, such as whether a politician is the parent of daughters, have also been shown to influence policymaking (Washington, 2008).

⁶ For an analysis of the implicit contractual conditions of political competition under which representation for minorities can influence their policy outcomes, see Pande (2003).

⁷ Chattopadhyay and Duflo (2004) and Beaman et al. (2010) find that women in Indian villages are more likely to attend local government meetings and speak up during them if the local government leader is a woman. Hoff and Pandey (2006) find that lower caste children perform worse in games when their caste identity is made public by

Women, as well as Scheduled Castes and Scheduled Tribes, are particularly disadvantaged sections of Indian society. Women are significantly under-represented in political institutions in India, accounting for only 10% of the membership of national legislatures in 2009. Over the period 1985-2007, only 5% of state legislators on average were women. Women were also significantly disadvantaged in terms of human development. In 2007, India was ranked 114 out of 182 countries on the Gender Development Index of the UNDP. India had only 933 women for every 1000 men due to pervasive neglect and high rates of female infanticide; the *Economist* magazine estimated the number of “missing women” in India to be greater than 100 million in 2009. Only 54% of women in India were literate in 2001, compared with 76% of men. Similarly, the literacy rates for SCs and STs were 55% and 47% respectively in 2001, compared to the nationwide average of 65%. Previous studies have also documented that members of the SCs and STs have significantly lower access to public goods (Banerjee and Somanathan, 2007).

In examining the overall impact of these two channels on the incentives of criminals and victims, we see two effects that go in opposite directions. First, there is a *deterrence effect*, in that the greater possibility of punitive action can deter actual crimes against minorities. There is also a *reporting effect*: both the possibility of punitive action and the presence of a sympathetic political leader in office can encourage minorities to report crimes against them more often. It is therefore an empirical issue to see which of these two effects dominate when we examine data on reported crimes. A negative effect of minority political representation on reported crimes

(upper caste) experimenters – specifically because they anticipate discrimination against themselves, and not due to a loss in self-confidence.

suggests a dominance of the deterrence effect over the reporting effect, while a positive effect of minority political representation on crime suggests dominance in the opposite direction.⁸

An obvious empirical hurdle in studying the effects of political representation of minorities is the fact that electing a minority group politician reflects the preferences of the electorate. Thus, it would be hard to disentangle the effects of having a minority political representative in office from the effects of unobservable characteristics of the electorate. We are able to address this issue by taking advantage of a unique policy experiment in India. In 1993, a constitutional amendment made it mandatory for Indian states to set aside one-third of all positions in local councils for women. The amendment also mandated reservation for other marginalized groups (members of Scheduled Castes and Scheduled Tribes).⁹

Our analysis exploits the fact that the legislation, which significantly increased local female leadership across India, was implemented at varying dates across Indian states (for various reasons discussed in Section 3). We can thus construct difference-in-difference estimates of the impact of women's political representation on reported crime rates. We find that the introduction of mandated political representation for women leads to large and statistically significant increases in the number of reported crimes against women. Reported rapes per capita rose by 23% and kidnapping of women showed a 13% increase. These results are robust to the inclusion of a host of controls for economic, demographic and political variables, the strength of the police force and state-specific time trends. Equally interesting is the fact that we find no

⁸ A positive effect on reported crimes may also reflect a backlash against minority leaders and a strengthening of taste-based discrimination (Rudman and Fairchild, 2004). However, given the size of the estimated effects, this is unlikely to be the case in our study as discussed below.

⁹ The Scheduled Castes are communities that have historically been at the bottom of the Hindu caste hierarchy; they suffered systematic economic and social discrimination including being considered "untouchable." Scheduled Tribes include communities that have traditionally been outside the Hindu caste system.

significant effects on any categories of crime not specifically targeted against women – such as kidnapping of men, crimes against property or crimes against public order. This strongly suggests that there is no overall deterioration in law and order conditions or policy changes other than the political representation that are driving our results.

Given the opposing effects of politician identity on reported crime outlined above, we interpret this increase in observed crimes against women as driven by a net increase in *reporting* of crime rather than in actual crime incidence. This is consistent with the fact that we find an insignificant effect of political representation on categories of crime such as murder, where the reporting bias is least likely to be a problem. Further, there is no evidence that the presence of female political representatives leads to a deterioration of police effort. The number of arrests increased significantly after the introduction of women's representation, particularly for cases dealing with kidnapping of women. The quality of police effort, measured by the percentage of cases where the prima facie evidence for arrests was upheld by a magistrate, also showed no decline after this reform. These findings raise our confidence that the relative increase in reported crimes is driven by improved reporting of such crimes rather than a rise in the actual crimes committed against women. Survey data on interactions with police also show a higher degree of satisfaction and lower bribes paid by women when their village council was headed by a woman.

In contrast to previous work on the effect of mandated reservations, we are able to examine whether additional representation at higher levels of government are important for crime outcomes. Having a woman as head of the district council has a much smaller effect on the reported crimes against women, over and above the broad-based representation of women in village and district councils. There is no effect of the presence of women in the state legislature.

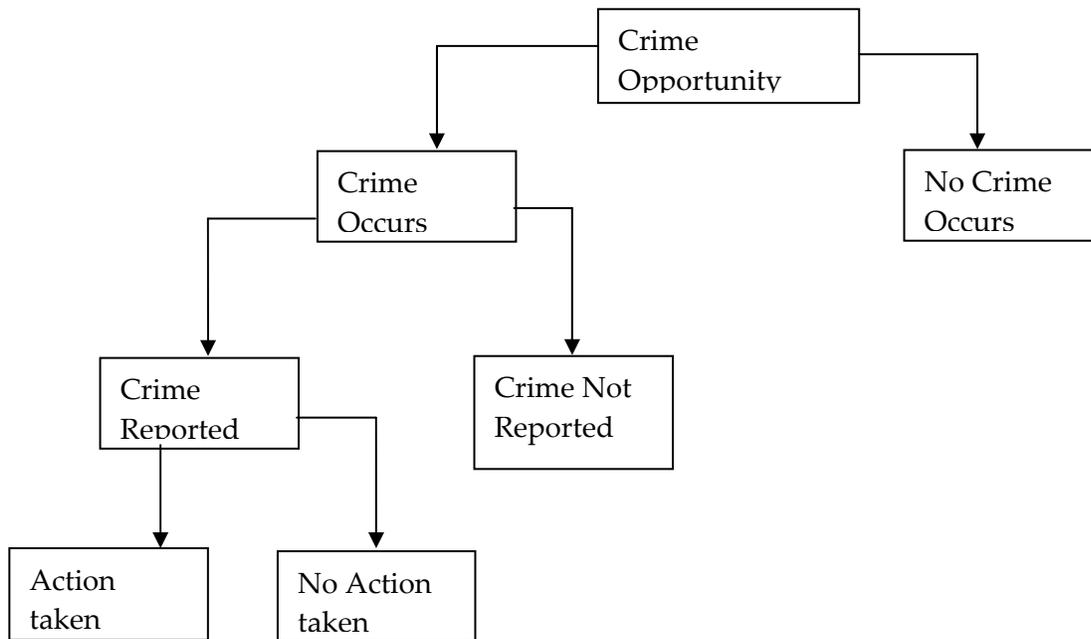
Finally, we also examine the impact of mandated representation for other disadvantaged groups, such as the Scheduled Castes and the Scheduled Tribes. Our data on crimes against such groups is more limited, but the results indicate a significant increase in the reporting of crimes specifically targeted towards lower castes once mandated representation of the lower castes is implemented. This is very much in line with our results on crimes committed against women, and strongly suggests that political representation is an important means of providing voice to disadvantaged groups within the criminal justice system.

The rest of the paper proceeds as follows. Section 2 lays out a simple framework to capture the various channels through which political representation can affect observed crime outcomes and arrests. Section 3 provides details on the institutional details of the *Panchayati Raj* local government system and political reservation in India and Section 4 describes the data and empirical strategy. Section 5 presents our results, and Section 6 concludes.

2. Political Decentralization and Crime

2.1 Crime: Occurrence, Reporting and Actions Taken

We outline a framework similar to Donohue and Levitt (2001a) that considers the incentives of three parties relevant to a crime situation: criminals, victims and the policing authority. First, a potential criminal decides whether to commit a crime or not. Next, when a crime occurs, the victim must decide whether to report it. Finally, for a crime that is reported, the police must decide how much time and effort to devote to investigating the crime and bringing the criminal to justice. The schematic diagram below outlines the sequence of events.



Let us consider the factors that affect the decisions of each of these parties, in sequence. First, the probability of a criminal act (C) would be a decreasing function of both the probability that the victim reports it (R), and probability of punitive action being taken against him (A).¹⁰

$$C = C(R, A)$$

This brings us to the victim, and the factors that affect his/her decision to report a crime.

$$R = R(A; c(I_P))$$

¹⁰ We include R and A as separate arguments because criminals may care about reporting independent of its eventual effect on punitive action against them, given its potential adverse effect on their reputation within the community.

We identify three key factors: the probability of action being taken (A) and the victim's cost of reporting (c). With regard to A , if there is little hope of justice being delivered, crime victims will see no point in reporting crime. The parameter c captures the costs of reporting a crime to the police, which can be economic and psychological. Economic costs may simply be the cost of getting to the nearest police station. Psychological costs may include trauma from recounting the event, fear of retaliation by the criminal, frustration with the legal authority, or shame – all of which may be particularly relevant for minorities. For instance, women may face distress and shame in cases of sexual harassment, rape etc. or a person of SC/ST background may fear retaliation if he reports crimes against him by members of upper castes. Both groups may face frustration with an unsympathetic law enforcement authority.

We conjecture that a victim's cost of reporting a crime also depends on the identity of the politician in power I_P . If the identity (caste/gender) is the same as that of the victim (I_V), then the victim is more likely to report the crime, since he or she feels that they are more likely to be listened to. A similar relationship can hold if the police officer is more likely to record the crime (rather than simply dismiss the complaint or harass the victim) if $I_P = I_V$.

Finally, we posit that the probability of action being taken against criminals by law enforcement officials (A) depends on the identity of the local political leader, as well as other factors such as citizens' awareness and the resources and commitment that the state has to law enforcement.

$$A = A(I_P; \text{Other factors})$$

Most importantly, we conjecture that the probability of punitive action is higher when there is a match between the caste/gender identity of the politician I_P and that of the crime victims.

The effect of politician's identity on observed crime depends on both the actual crime occurrence, C , and reported crime, R . Given the above assumptions about the effects of politician identity I_P on action against criminals A and the cost of reporting c , a match between the identity of the politician and victim ($I_P = I_V$) would have an impact on both C and R . If the leader has the same group identity as the victim, A would be higher and there would be a *negative* effect on actual crime occurrence, C . On the other hand, $I_P = I_V$ will induce a *positive* effect on crime reporting, R through higher A and also through reducing minorities' cost of reporting a crime, c . The overall effect of politician's identity on observed crime outcomes is therefore ambiguous.

One point to note however, is that for crimes where the reporting bias is likely to be least, the negative crime reduction effect must dominate when $I_P = I_V$. For other crimes where there is no such match between politician and victim identity, $I_P \neq I_V$, political representation for minorities should not affect observed crime outcomes. Thus, we generate the following testable implications.

2.2 Testable Implications

- (1) For observed crimes against minority victims (e.g. women), the overall effect of having a minority group politician in power is ambiguous. A positive effect on such crimes indicates a net increase in crime reporting while a negative effect indicates a net reduction in actual crimes.
- (2) For crimes where the reporting probability is highest, the negative crime reduction effect is likely to dominate.

(3) Minority political representation should have no effect on categories of crime where victims do not belong to the minority group.

It is an empirical question whether the relevant political representative with the power to influence action being taken against criminals is at the village, district, the state/national level – or one or more of these. On the one hand, a political leader at a higher level of government (e.g. women legislators) may have greater influence over the police, both because of their prominence, and the fact that the state government is the one who controls the police. On the other, the local politician is more likely to know the local police personnel and be accessible to crime victims. We prefer to let the data speak for itself on this matter, by conducting our analysis for women representatives at both the local and the state level.

3. Crime, Policing and Political Representation in India

3.1 Crime Procedures in India

The Code of Criminal Procedure provides the basis for the criminal justice system in India. This code specifies that all information given to the police must be reduced to a written report by the police officer, read and signed by the informant. After this “First Information Report” or FIR has been filed, the police is required to investigate the crime, and maintain detailed police diaries of the progress of the investigation. During such investigation, the police may question or arrest any suspects.¹¹

At the conclusion of the investigation, the police must deliver to the magistrate a police report which details the results of the investigation, and whether the accused has been arrested and/or released on bail. Based on this report, the magistrate makes a decision of whether there is

¹¹ All arrested persons must be produced before a magistrate and charged with a specific crime within 24 hours or be released. This is the standard procedure under the *habeas corpus* requirements of Indian law.

sufficient ground for proceeding against the accused. If he so rules, a formal chargesheet is prepared, detailing the offence with which the accused is charged. If the magistrate feels that the police report does not provide sufficient grounds on which to frame a charge, the case is dismissed at that point. The fraction of cases in which the police report results in a formal chargesheet therefore reflects in part the quality of the investigation carried out by the police; this will be a variable we will use in the empirical analysis.

We should note that our crime data comes from the very first stage in this process i.e. the filing of the First Information Report. This requires two things: the victim or another informant must come to the police station and give information regarding a crime, and the police officer must do his duty and make a written record of this information. The victim in many cases can face physical or mental costs of coming forward to file a FIR; in the case of vulnerable segments of society, s/he may even face the risk of becoming the victim of a further crime if s/he reports it. Reporting is therefore likely to be lower for certain types of crime than others, and also likely to be lower in places where the police force is less motivated or more corrupt. Police officers are often found to be unsympathetic to women victims and refuse to record crimes against women.¹²

Several studies indicate that there is considerable under-reporting of crime in India. For instance, about 3.9% of households in the India Human Development Survey 2005 (IHDS) report a theft in the past 12 months, and 2.5% of households report being attacked or threatened. However, based on the National Crime Records Bureau (NCRB) data, only 0.12% of all households reported a theft in 2005, and only 0.2% of households report any violent crime.¹³ Similarly, 12% of households in the IHDS reported that unmarried girls were “sometimes” or

¹² Some case studies found the police characterizing an attempt to record a rape as a method to extort money, a refusal to record domestic violence because “the husband has a right to beat the wife,” and assuming that a missing girl had eloped rather than kidnapped (National Commission for Women, 2003).

¹³ Authors’ calculations from NCRB data, assuming an average household size of 5 members.

“often” harassed in their neighborhoods, compared to only 0.06% of households based on the NCRB data. Some of this difference is likely due to the unwillingness of the victims to come forward. The behavior of police is also a factor: in a study using decoy crime victims, Banerjee et al (2009) find that only 50% of sexual harassment cases and 53% of domestic violence cases are registered by the police, in contrast to 92% of break-ins and more than 64% of motorcycle thefts. A report by the National Commission of Women (2003) cites that less than 5% of rape cases result in convictions, providing a serious disincentive for women to report such crimes to the police.

3.2 Panchayati Raj: The Progress of Political Decentralization

The Panchayati Raj is a system of village level (Gram Panchayat), block level (Panchayat Samiti), and district level (Zilla Parishad) councils, responsible for the administration of local public goods. Members of the councils are elected by the people. The village-level governing bodies, the Gram Panchayats, have been known to exist in India since ancient times. However, their real power, effectiveness and representativeness have varied considerably over time.

Ghatak and Ghatak (2002) argue that prior to the 1990s, the Panchayati Raj was not generally effective: elections were not held, and the Panchayats did not assume any active role. In an effort to correct this, Narasimha Rao’s Congress government introduced the 73rd Amendment Act to the Constitution of India in 1991, after two earlier failed attempts. After some debate, the bill was finally passed in December 1992. Thereafter, it was ratified by a majority of the states, and came into effect in April 1993.

This 73rd Amendment Act required each state to set up a three-tier system of local government, comprising village, intermediate and district level governance bodies.¹⁴ All members of these local bodies were to be directly elected by the people every five years, and the Act provided for the establishment of State Election Commissions to conduct such elections. Twenty-nine areas of administration, including decisions over health and education services, roads, sanitation and other local services were to be devolved to these local government bodies (or Panchayati Raj institutions (PRIs) as they came to be known). State Finance Commissions were to be set up to provide recommendations on revenue-sharing and making grants to PRIs. The Act thus provided for a considerable degree of political, administrative and fiscal decentralization to the local bodies.

Two further provisions were made to strengthen the representation of marginalized communities in these local bodies. At least one-third of all council seats at the village, intermediate or district level were required to be filled by women, and seats were also to be reserved for Scheduled Caste and Scheduled Tribe communities in proportion with their population in that state or district. Further, the positions of chairpersons of these local bodies were also to be reserved for women and members of the Scheduled Castes and Scheduled Tribes in the same way. These reservations would function by rotation i.e. in each year, one-third of the districts would have their chairperson position reserved for women, and another set of districts would have this reservation in the next election cycle. Similar provisions were made for urban local bodies as well.

How has this decentralization experiment been implemented in practice? The Constitutional amendment required all states to amend existing laws or pass new laws in compliance with the 73rd Amendment. As required, all states passed compliant legislation within

¹⁴ Certain small states were required to set up only two-tier systems of local government.

one year.¹⁵ However, the actual provisions of the Act were implemented very slowly. In terms of political decentralization, elections were eventually held by all states to these local bodies, though in some states, they were delayed by litigation regarding the provisions of the state legislation.¹⁶ In terms of administrative decentralization, as of 2007, only three major states had operationally devolved all 29 functions to local governments. In terms of fiscal decentralization, PRIs in most states were heavily dependent on grants from the state government for their revenues.

In this paper, we focus on the changes in politician identity brought about by the reservation provisions in the political decentralization aspects of the Panchayati Raj. We should note that this constitutional amendment did not give local bodies any real control over the law and order machinery, and therefore is unlikely to have an effect on crime through channels other than politician identity.

4. Data

4.1. Data on Crime

We obtained data on reported crime at the district and state level from various issues of the “Crime in India” publications of the National Crime Records Bureau (NCRB) at the Ministry of Home Affairs. The Criminal Procedure Code of India divides all crimes into two categories: (i) cognizable – which are dealt by the Police, and in which a police officer may arrest a person with or without a warrant and (ii) non-cognizable – which are generally left to be pursued by the

¹⁵ The exceptions are Delhi, which has passed no Panchayati Raj legislation, Jammu & Kashmir which did not explicitly pass legislation but amended the state laws to be in compliance, and the small states of Nagaland, Mizoram and Meghalaya, which were not required to comply with this constitutional provision.

¹⁶ We discuss the reasons for the variation in the timing of the implementation of the 73rd Amendment across states in Section 4.2.

affected parties themselves in Courts. Only cognizable crimes are reported in the NCRB publications. Our analysis focuses on cognizable crimes prosecuted under the provisions of the Indian Penal Code, as well as other Special and Local Laws.

Our main variable of interest is crimes against women. These include the following crime categories: rape, kidnapping of women and girls, dowry deaths, sexual harassment, molestation, cruelty by husbands or relatives and importation of women and girls, prostitution, pornography, giving and receiving dowry and sati. Appendix 1 provides details on the exact definition of these crimes. The reporting system for these crimes changes over time, as the NCRB started reporting additional crime categories separately. For instance, only rape and kidnapping of women were reported in the period before 1995, while other categories such as dowry death, molestation, sexual harassment and cruelty by husband or relatives started being recorded in 1995. Importation of women and girls was included in 2001. In all our regressions, we will therefore include year fixed effects to control for such nationwide changes in reporting. We will also examine the specific crime categories of rape and kidnapping of women and girls, which are consistently reported over a longer time period. We also examine crimes which are not gender-specific, such as property crimes or crimes against public order. In the final section, we examine crimes against Scheduled Castes and Scheduled Tribes, which are recorded separately by the NCRB starting in 1992.

The empirical analysis uses many control variables and additional outcomes at the state level. These include economic variables, such as state GDP levels and growth rates, variables related to police strength and staffing shortfalls, and additional outcomes such as the number of arrests and convictions. We also examine survey data on the quality of interactions with the police. These data were collected by the Public Affairs Centre (a non-governmental

organization) as part of their Millennial Survey to assess the functioning of a range of public services in 2000. We examine survey data from eleven major states, after matching it with information on whether the respondents lived in a village in which the position of the leader of the village councilor was reserved for women.¹⁷

4.2. Measures of Political Decentralization

Our main measure of political decentralization is a dummy which equals one if marginalized sections of society are given political representation. In the case of women, this dummy equals one in years following the first local government election which implemented the “not less than one-third” reservation scheme for women representatives. As Table 2 shows, the date of this first election varies considerably across the major states of India.

There are three main reasons for the variation in election timing across states. First, several states already had a system of local government even before the enactment of the 73rd Amendment. In most of these cases, the state government waited for the term of office of incumbent local officials to expire before conducting fresh elections in compliance with the 73rd Amendment. On the other hand, several states chose to incorporate the provisions regarding women’s representation into their own state laws even before the constitutional amendment came into effect. This was because they were aware of the impending legislation due to the long process of passing this law (see Section 3.2) and had elections for local bodies scheduled as per their existing system. For instance, West Bengal made major amendments to their state-level legislation to provide reservation for women and SCs and STs in the 1993 election, once the passage of the constitutional amendment was imminent. Kerala made a similar change to its law

¹⁷ The Millennial Survey analysis was conducted while one of the authors was an intern with the Public Affairs Centre in spring 2003.

in 1991. Other states already had reservation for women (Karnataka) or SCs and STs (Maharashtra and Madhya Pradesh) long before the constitutional amendment. We can, of course, control explicitly for the presence of a pre-scheduled local government election, but since all our regressions include state fixed effects, we expect this characteristic to be captured by the state fixed effect.

A second reason for variation in election timing is due to lawsuits challenging certain aspects of PR implementation. For instance, elections in Bihar were delayed due to a lawsuit challenging the proposed reservations for Other Backward Castes (OBCs) which had not been explicitly mandated by the constitutional amendment. These can be regarded as reasonably exogenous factors in causing the delay.

A third reason is likely to be more endogenously determined: some states simply delayed the elections due to various pretexts (the time is not right, lack of budget etc). Assam is one example of this. The state had elections in 1992, and therefore should have had its first PR-compliant elections in 1997, but the elections were conducted only in December 2001. The second round of elections was also delayed, taking place in December 2007, rather than in December 2006. However, our main results are robust to the exclusion of any specific state.

4.3 Empirical strategy

We conduct the analysis for the 17 major states of India over the period 1985-2007.¹⁸ Table 1 provides the summary statistics for the crime data used in our analysis. To gauge the impact of

¹⁸ The states included in the study are the large states of India, which account for 97% of the total population and 98% of total crimes reported: Andhra Pradesh, Assam, Bihar, Gujarat, Haryana, Himachal Pradesh, Jammu & Kashmir, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Orissa, Punjab, Rajasthan, Tamil Nadu, Uttar Pradesh and West Bengal. Three new states—Chhattisgarh, Jharkhand and Uttarakhand—were carved out in 2001, from Madhya Pradesh, Bihar and Uttar Pradesh respectively. All our analysis is conducted by merging these newly created states with their original states, for the sake of comparability of sample units over time. All of these split states carried over the PR legislation from their parent states, but this aggregation can sometimes cause measurement

political representation, we run state-level regressions of crimes rates (per1000 population) on the decentralization variables defined above. Our base specification is the following:

$$(1) \quad \ln C_{st} / P_{st} = \alpha_s + \beta_t + D_{st} + X_{st} + \varepsilon_{st}$$

where C_{st} is the crime rate for state s in year t , P_{st} is the population in state s and year t , α_s is a fixed effect for state s , β_t is a fixed effect for year t , $D_{st} = 1$ in years including and following the first election with political representation for a given minority group, and X_{st} is a set of state-time varying controls. We have chosen to use the date of the first local election with reservation for women as our independent variable to study the effects on crimes against women. All standard errors are clustered at the state level, to account for possible correlated shocks to state-level crimes over time.

One concern with the above specification is that there can be many other factors which affect the rates of crime against women in a given time and place. Literacy rates could affect awareness of victims' legal rights and influence reporting of crimes as well. Per capita income has also been found to be associated with higher reported rates of crime.¹⁹ Crime is typically higher in urban areas relative to rural ones. There is some anecdotal evidence that high male-female ratios result in increased rates of crime. Perhaps states which implemented reforms earlier were those where the Chief Minister was a woman, and so we might mistakenly attribute the effect of a higher-level woman representative to a lower-level one. We explicitly control for all of these variables in our regressions. Finally, we also include measures of the size of the state

error in our dependent variable: for instance, Bihar conducted local elections in 2001 and 2006, but Jharkhand has not conducted a single PR election yet.

¹⁹ Soares (2004) finds a positive correlation between per capita income and reported crimes, which is explained by larger reporting errors in less developed countries.

police force as a control for varying levels of commitment to crime deterrence across states, though this might in fact be the channel through which political representation affects crime.

A further concern is that the timing of policy changes may be endogenous to the trends in crime. In addition to including state and time fixed effects, we also show specifications controlling for state-specific time trends. Further, we should note that several of the factors affecting the timing of this reform (as detailed in section 3.2) can be considered exogenous to the trends in crime in those states. The fact that we mainly observe the reform to be associated with an increase in reported crimes against women also rules out incentives of state governments to prevent reporting of crimes in an attempt to make themselves look good.

5. Political Representation and Reported Crimes against Disadvantaged Groups

5.1 Effects of Female Political Representatives on Crimes against Women

We find that political representation for women is associated with a large and significant increase in the reported crimes against women. Table 3 shows the coefficients on the post-reform dummy D_{st} , when we run the regression (1) for a range of crime categories and specifications. Reported crimes against women (per 1000 population) are 44% higher after political reservations for women are implemented (Column 1). This coefficient remains robust when we control for a large number of demographic, economic and political controls (column 2), and even when we control for the police strength in the state at that time (column 3). This strongly suggests that these effects are not due to a policy change in policing, but rather driven by the change in the identity of the politician.

A large positive effect is also confirmed in specific types of crimes against women: the coefficient on the post-reform dummy D_{st} is 0.208 for rapes and 0.123 for kidnapping of women,

which works out to a 21% increase in rapes and a 13% increase in the kidnapping of women (estimates from Column 3). In terms of number of crimes, this amounts to an additional 188 reported rapes and 293 kidnappings per state. The results are practically unchanged when we control for female literacy rather than overall literacy (Column 4). These strong positive effects persist for most categories of crime against women even when we include particularly strong controls, in the form of state-specific linear trends in addition to demographic, political and economic controls (Columns 5 and 6), though the coefficients are somewhat smaller in magnitude. We should note that this specification controls for all linearly varying state-level variables, including any linear effect of representation of women (and therefore might be “overcontrolling” for the effects of the reform). As the reader may recall from Section 2, a positive effect of having a local level female politician in power on crimes against women is most likely attributable to a net increase in the *reporting* of such crime.²⁰

We note further that we see the increases in reported crime within two years of the implementation of the reform. Figure 1A shows the coefficients obtained from a specification like (1) where the post-reform dummy is replaced by a series of dummies for one, two and three-plus years since the reform, along with a similar number of pre-reform dummies. The figure also shows no particular pre-trends prior to the implementation of the *Panchayati Raj* reforms, which is an important confirmation of our identification strategy.

5.2 Effects on Other Categories of Crime

²⁰ The above results are also robust to dropping states with some unusual characteristics: Jammu & Kashmir (which has a significant military presence due to a long-running conflict between India and Pakistan), Karnataka (which was the first state to implement women's reservations) and Uttar Pradesh (the last state to implement women's reservation).

If the results in Table 3 are purely due to the change in the gender identity of the politician, then we expect to see little or no effect on categories of crime where the victims are not women. One such category is the kidnapping of men and boys, which is reported separately from 1988 onwards. Consistent with our hypothesis, we do not see any significant relationship between this crime category and political reservations for women (Table 4). We also show results for other crime categories that do not have any overt gender component: crimes against property (robberies and burglaries), crimes against public order (riots and arson) and economic crimes (counterfeiting, cheating and breach of trust). As we might expect, none of these crime categories show any statistically significant relationship with the progress of women's political reservations. This makes us more confident that our results of Table 3 are indeed capturing the effect of women's political representation, rather than any other concurrent reforms which might have been implemented such as changes to reporting rules, changes to policing strategy or overall economic growth or inequality trends.²¹ When we examine murder rates, where reporting error is likely to be the least, we do not find any increase after women's political representation. This lends further support to our interpretation of the Table 3 results as an increase in reporting of crime, rather than an increase in true crime itself.

5.3 Retaliation Against Women?

A potential alternative explanation of the results presented so far is that political power for women may lead to a backlash against them by men who resent this outcome. For example, if there is a perception that women's place is in the home, then they may be punished by men for daring to come out in public life. If so, the positive coefficient on crimes against women could

²¹ For the impact of overall economic growth or rising inequality on crime in India, see Prasad (2008) and Charmorbagwala and Sharma (2008).

be due to an actual increase in crimes against them rather than in reporting of crimes, with no change in other non-women specific crime outcomes. However, given the large magnitude of the effect we observe -- a 23% increase in rapes and a 13% increase in kidnapping – such a story seems less plausible. We also conducted several additional checks to examine the validity of this explanation.

First, we examine data on murders, a category of crime for which we believe reporting problems are likely to be minimal. An increase in the murders of women after political representation is enacted might be indicative of retaliatory acts taking places. Unfortunately, data on gender of murder victims is available only after 1999. We examined specific states which enacted women's empowerment after this date: Figures 2A and 2B document the time trend in murders of women and the ratio of female murder victims to male victims for the states of Assam and Jammu & Kashmir, which implemented political reservations for women in 2002 and 2001 respectively. Both states witness a decrease in the murder rates in the post-reform period. We also examined data on murders where the motive was stated as love affairs or sexual causes; data on motives of murders is available for our entire time period. We find no significant impact of women's reservation on the number of such murders or their share in overall murders (results available upon request).

Second, we analyzed data on suicides by women in the pre vs. post-reform period. If retaliation by men had been the main reason for the observed positive coefficient on total crimes against women, we might expect an increase in suicides as desperate women are treated worse and denied access to the criminal justice system. As with the murder data, we find no evidence of any statistically significant increase in the percentage of female suicides. Suicides by women

increased by a statistically insignificant 6 percent in the post-reform period; suicides by men increased by 8 percent (results available upon request).

In our district level analysis below, we also consider the district characteristics that are likely to be associated with greater retaliation against women. Examining the interaction effects of characteristics such as female literacy and sex ratios with the introduction of political reservations for women provides further evidence against the retaliation hypothesis. Finally, if the observed positive coefficients are driven by men's resentment, we would not expect to see any responsiveness in law enforcement outcomes (given that the police force is largely male). Our findings below on the quantity of police activity (arrests) as well the quality of their work (charge-sheeting, i.e. convictions following arrests) suggest otherwise.

5.4 Police Activity

One of the channels outlined in our framework was that a match in the minority identity of the politician and victim will lead to an increase in the probability of punitive action against those who commit crimes against those minorities. We find that the number of arrests per 1000 population increases by a statistically significant 19% after women's reservations are implemented (Table 5, Column 3 estimates). These estimates include controls for economic and demographic variables, as well as for overall police strength as a proxy for the resources available to the police. Arrests for rape also show an increase of over 12% during this period (statistically significant at 13% level). Further, we observe a significant increase in the arrests for kidnapping of women by as much as 18%, while there is no such impact on arrests for kidnapping of males.²⁴ As for the results on reported crime, we see that the increase in arrests

²⁴ We also examined the results for the ratio of arrests to total crimes. For overall crimes, this shows a significant rise after women's empowerment. Unlike with the results for the number of arrests per 1000 people reported in

also happens within a year or two of the reform being implemented, suggesting that police are responsive to victims reporting their crimes (Figure 1B).

We also examine the impact of political empowerment of women on chargesheeting rates. As discussed in Section 3.1 above, the chargesheeting rate, or the fraction of cases in which the police report about the crime results in a formal chargesheet, reflects the quality of action by the police (unlike the number of arrests which proxies for the quantity of police action). As shown in columns (4)-(6) of Table 5, political empowerment of women has no statistically significant effect on chargesheeting rates. Hence, there is no evidence of a decline in the quality of police action with increased political representation of women.

Overall, we do not find any evidence for police to have become more lax in response to empowerment of women (as measured by the quantity or quality of police action). These findings also lend support to our hypothesis that observed increase in crimes against women is due to greater reporting rather than increased crime due to male retaliation. For instance, actual crimes against women following their empowerment might increase because women are incompetent leaders and/or are not allowed to exert real authority and hence police become lax under a woman leader. Alternatively, if men resented women's greater power, the increase in actual crime would be unlikely to result in more arrests or chargesheeting by (the largely male) police force. Our findings above do not support these possibilities.

How does the presence of a female local leader increase reporting of crime? As discussed in Section 2, there might be an empowerment effect where women are more likely to approach

table 5, there is no significant effect on the arrest per crime for rape and kidnapping of women. This is simply because the presence of female leaders results in not just the number of arrests, but also the reporting of crimes itself. For instance, with rapes, there is a 23% increase in reported rapes (table 3), as well as 12% increase in the number of arrests (table 5). Thus, focusing on the arrest per crime variable alone, in the absence of crime reporting data, can yield a misleading picture.

the police, or there may be changes in the behavior of the police when approached by a crime victim. We first note that the presence of women political representatives does not increase the overall strength of the police force or the presence of female police officers, which might be an important variable in the victim's decision to approach the police (Table 6A). This is not too surprising in light of the administrative setting where local councils (village or district) have no direct jurisdiction over police in terms of staffing or salaries.

On the other hand, survey data from the Millennial Survey show that women display greater satisfaction in their interactions with the police when they live in villages with a female council head (Table 6B). Women are slightly more likely to approach the police in such villages (Columns 1 and 2). While the sample of respondents who actually had dealings with the police is relatively small, we do find that women in villages with female council heads were significantly more likely to say that the police solved their case (Column 3) and significantly less likely to pay bribes to the police (Column 7). They were also less likely to say that the police refused to register their complaint (Column 5). We should note that the difference in women's responses across villages that did and did not have women council heads was larger than the difference for men in all these cases. These results are indicative of a positive change in police attitudes towards crimes against women, in the presence of women leaders (perhaps driven by greater confidence of the women victims).

5.5 Impact of Political Representation at Higher levels of Office in the State

At what level does political representation of women have an impact on crime outcomes? The Panchayat Raj reforms ensured representation at both village and district councils, with the further proviso that one-third of village councils in each district and one-third of the district

councils in a state have female chairpersons. Using crime data at the district level, we are able to examine whether having a female district chairperson has an impact on reported crimes, over and above the representation for women in village councils, village council chairpersons and district councils.²⁵ A priori, it is not obvious whether this effect will be larger or smaller than the overall representation effects documented earlier. If chairpersons have a greater degree of influence with local police, this effect might be higher, while if the greater proximity of village level leaders to both the police and the victims is a major factor, then having a female district chairperson might not have much additional impact.

We collected data on the reservation status of the district chairperson in 10 out of our 17 major states.²⁶ The rotation of such reservation across districts within a state provides us with intra-state variation in the political representation of women in local government. We run the following specification, similar to the state-level regression in (1):

$$(2) \quad \ln C_{dt}/P_{dt} = a_d + b_t + gChairPerson_{dt} + d'X_{dt} + e_{dt}$$

where the dependent variable is a district-level crime outcome divided by an appropriate population unit. The key independent variable is the dummy variable $ChairPerson_{dt}$ which equals 1 if the district chairperson post in district d in year t is reserved for women, and zero otherwise. The specification includes district and time fixed effects, district level controls for female-male population ratios, literacy rates and urbanization, as well as a control for the timing of overall Panchayati Raj reform implementation at the state level. All standard errors are

²⁵ The district is the lowest level at which the NCRB reports crime statistics.

²⁶ These states are Andhra Pradesh, Bihar, Gujarat, Haryana, Kerala, Maharashtra, Orissa, Punjab, Rajasthan and West Bengal. The data were obtained by contacting the State Election Commissions or the Ministry of Rural Development or Ministry of Panchayati Raj of individual states.

clustered at the district level. We also check for longer-term effects by using the cumulative number of years of such reservation for women.

Having the district chairperson post reserved for women does not have a significant impact on reported crimes against women in that year (Table 7a, Column 1). Interestingly, we do find some evidence for a long-term effect of a woman district chairperson in raising the total reported crimes against women (Column 2, Table 7a). Each additional year a woman has been in the district chairperson position increases the number of reported crimes by 3.4%, which is statistically significant at the 5% level. The effect, however, is much smaller in magnitude than the effect of broad-based overall representation of women (roughly one-sixth).²⁷ Thus, our results suggest that broad-based representation of women through local council members has a much bigger effect on reported crimes, compared to the additional impact of the gender of the chairperson. This is an important result in terms of understanding the kinds of political representation which are likely to matter most for the welfare of disadvantaged sections of society.

We then explore whether the effect of a district chairperson varies across districts where women are more/less empowered. We use two (relatively crude) proxies for status of women – the population ratio of women to men and the literacy rate of women in a district. We interacted $ChairPerson_{dt}$ with these two proxies, and the results are shown in Columns 3 and 4 of Table 7a. In districts where women are more empowered, having a woman district chairperson is associated with a larger number of reported crimes against women. The magnitude of the woman chairperson effect in more progressive districts is economically significant as well. For a district in the 75th percentile of the female/male ratio or the female literacy rate, having a woman district

²⁷ The results are qualitatively similar if we use a dummy for whether the district *ever* had a woman chairperson as the key explanatory variable (available upon request).

chairperson raises the reported crimes against women by about 8%. Notice that this is over and above any effect of broad-based representation of women as captured by the timing of the implementation of reservation at the state-level. In columns 5-12 of Table 7a, we examine whether the effects of a woman district chairperson discussed above are driven by particular crime categories – rapes and kidnapping of women. On average, having a woman chairperson at the district level continues to have a statistically insignificant effect on reported rapes and kidnapping of women (columns 5 and 9).²⁹ Surprisingly, we do not find any evidence for a significant long-term effect, or for a significant effect in districts where women are more empowered for these crime categories (columns 6-8 and 10-12). Although, we do not have enough data to examine other crime categories rigorously, the results suggest that the effect of a woman district chairperson on overall reported crimes against women, if any, is more likely to be driven by less severe crimes.³⁰

Next, we extend our analysis to consider the effects of having women members in the state legislative assembly (MLAs). We should note that women are significantly under-represented at these levels of government, where no mandated representation rules are in place. In our data set, only 5.5% of the state legislators in any given year are female. In this sense, we should note that the Panchayati Raj rules mandated a very large increase in women's representation over the existing status quo. This low level of representation means that we are less likely to find any effect of state-level women representatives on rates of reported crime.

²⁹ The estimated coefficient on timing of reservation at the state-level is statistically insignificant for rapes (columns 5-8). This may be due to the selected sample of states with district-level data -- the coefficient is not statistically different when we estimate the state-level regressions on the selected sample.

³⁰ For example, the average reported cases of (i) molestation,(ii) sexual harassment and cruelty by husbands and relatives are much higher in districts which had a woman chairperson at any point in time (or the long-term effect) than in districts which never had a woman chairperson.

For women MLAs, we run a regression specification similar to (1), except that the independent variable of interest is the fraction of female MLAs in power at the state level (Table 7b, column 1). Since this fraction is potentially endogenous, we instrument for the fraction of women MLAs using the fraction of closely contested elections where the winner was female (Table 7b, Column 2).³¹ We should note that the OLS and IV coefficients show a positive relationship between women's representation and reported crime, though none of these coefficients are statistically significant at the 5% level.

5.6 Effects of SC/ST Political Representatives on Crimes against SC/STs

Since the *Panchayati Raj* policy provided for the mandated representation of Scheduled Castes and Scheduled Tribes (SCs/STs) in local councils, we examine whether reported crimes against these communities also increased after such representation. The case of SCs/STs is slightly different from the mandated representation of women. First, these communities already had mandated representation in the state legislature (in proportion to their population share). But given the results in Section 5.5, the presence of local leaders from these communities might be of greater importance. Second, data on crimes against SCs/STs is only available from 1992 onwards. In order to ensure that there are sufficient pre-reform observations, we restrict our analysis only to states which implemented the *Panchayati Raj* provisions for SCs/STs in 1995 or higher. Further, some states do not have any Scheduled Tribes in their population, which restricts our sample size for these regressions.

Similar to the results for women, we find a significant increase in the reported crimes against Scheduled Castes after these groups obtain mandated representation in local councils. In

³¹ A similar instrument is used by Clots-Figueras (2008) in her analysis of the effects of women legislators on public good outcomes.

particular, the largest increase is in crimes which are prosecuted under the Prevention of Atrocities Act, which specifically includes offences committed against Scheduled Castes by non-SCs (including stripping, insulting, forced labor and sexual exploitation). As before, we show results controlling for a range of demographic, economic and political controls (Columns 2-3). In addition, we also ran the regressions for non-logged crime variables to avoid the problem of dropping state-year observations where no crimes were reported for some categories (Column 4). The results on overall crimes against SCs, in particular those classified as “atrocities”, are robust to all these specifications.³² As for the women, the fact that we do not see such increases in crimes which are not caste-specific (e.g. murder or rape, where the victims might be targeted for reasons other than their caste) lends greater weight to our hypothesis that it is political representation of such communities which is driving higher reporting of such caste-related crimes.

We do not find any significant results of political representation for Scheduled Tribes on crimes committed against them (Table 8, Columns 5-8). This could be because of lower data availability, or perhaps the inability of Scheduled Tribes to mobilize politically as effectively as Scheduled Castes. Other studies on Scheduled Tribes have found that mandated political representation for Scheduled Tribes have not resulted in greater access to primary schools or other types of infrastructure (Krishnan, 2007; Banerjee and Somanathan, 2007).

6. Conclusions

This paper provides one of the first systematic analyses of the effects of mandated political representation for politically disadvantaged groups on crime outcomes against them, using data from the *Panchayati Raj* experiment in India. We find that having female leaders at the local

³² These results are also robust to using a tobit specification.

government level induces strong positive and significant effects on reporting of crimes by women – and no effects on categories of crime where women are not victims. We find that there is also an effect on the number of people arrested for crimes against women, and on the quality of womens’ interactions with police, suggesting that the female local leaders are influential in changing law enforcement and victim behavior, particularly by providing greater voice to women in the criminal justice system. In contrast to these effects of women in local councils, we do not find significant effects of women’s representation at higher levels of government, such as district chairperson positions or state legislatures. We find a similar result for the case of Scheduled Castes. Despite already enjoying mandated representation at higher levels of government, we find that representation of Scheduled Castes in local councils leads to increased reporting of crimes where the victims are specifically targeted because of their caste.

Our results provide evidence that political representation of specific groups is a means to increase the empowerment of disadvantaged members of society with respect to the criminal justice system. These changes appear to be primarily driven by the better performance of police in responding to the crimes targeted against such sections of society, and happen relatively quickly. The gender or community identity of local leaders thus appears to be an important determinant of the functioning of public services and ensuring access to justice.

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Table 1: Summary statistics

<u>Panel A: Crime data</u>	#obs	Mean	S.D	Min	Max
Total crimes against women per 1000 women (1985-2007)	391	0.173	0.137	0.001	0.570
IPC crimes against women per 1000 women (1985-2007)	391	0.146	0.131	0.001	0.511
Rapes per 1000 pop (1985-2007)	391	0.015	0.010	0.000	0.049
Kidnapping of women and girls per 1000 women (1988-2007)	340	0.038	0.031	0.005	0.149
Kidnapping of men and boys per 1000 men (1988-2007)	340	0.010	0.008	0.000	0.045
Murders per 1000 pop (1985-2007)	391	0.035	0.018	0.011	0.150
IPC crimes against property per 1000 pop (1985-2007)	391	0.446	0.191	0.099	1.087
IPC crimes against public order per 1000 pop (1985-2007)	391	0.110	0.086	0.000	0.449
IPC economic crimes per 1000 pop (1985-2007)	391	0.059	0.033	0.019	0.200
Total crimes against SCs per 1000 SC pop (1995-2007)	175	0.171	0.175	0.000	0.766
Civil rights violations of SC per 1000 SC pop (1995-2007)	175	0.008	0.013	0.000	0.080
Atrocities against SCs per 1000 SC pop (1995-2007)	175	0.052	0.067	0.000	0.320
Total crimes against STs per 1000 ST pop (1995-2007)	145	0.084	0.126	0.000	1.031
Civil rights violations of ST per 1000 ST pop (1995-2007)	145	0.003	0.010	0.000	0.087
Atrocities against STs per 1000 ST pop (1995-2007)	145	0.021	0.044	0.000	0.279
 <u>Panel B: Police activity</u>					
Arrests per 1000 pop (1985-2007)	391	2.785	0.962	0.178	6.167
Arrests for rape per 1000 pop (1988-2007)	340	0.020	0.012	0.004	0.062
Arrests for kidnapping of women per 1000 pop (1988-2007)	340	0.020	0.016	0.000	0.101
Arrests for kidnapping of men per 1000 pop (1988-2007)	340	0.008	0.007	0.000	0.041
Chargesheeting rate for all crimes (1991-2007; %)	289	76.663	10.901	41.500	94.500
Chargesheeting rate for rapes (1991-2007; %)	289	94.176	5.560	72.800	100.000
Chargesheeting rate for kidnapping (1991-2007; %)	289	78.102	10.042	31.700	94.000
Chargesheeting rate for murder (1991-2007; %)	289	80.192	16.500	11.000	99.400
Police strength per 1000 population	391	1.541	0.885	0.084	5.923
Female police officers per 1000 population (1988-2007)	337	0.026	0.026	0.000	0.141
 <u>Panel C: Demographic and economic control variables (1985-2007)</u>					
Female-male ratio	391	0.937	0.045	0.859	1.070
Proportion of rural population	391	0.748	0.093	0.510	0.919
Proportion literate	391	0.513	0.121	0.273	0.811
Proportion with farming as main activity	391	0.178	0.054	0.021	0.294
Woman Chief Minister (dummy)	391	0.079	0.271	0.000	1.000
Per capita state GDP ('000 rupees)	391	1.674	0.762	0.000	4.239

Table 2: Dates of Panchayati Raj Implementation Across States of India

Year of first election with reservation for women	Number of states
1987	1
1991	1
1992	2
1993	1
1994	2
1995	5
1996	1
2001	2
2002	1
2006	1
Total	17

Table 3: Women's Political Representation and Crimes against Women

	Women's reservation implemented					
	No controls	Demographic, economic and political controls	Control for police strength	Control for female literacy	Control for state-specific time trends	Control for state-specific time trends + demographics
	(1)	(2)	(3)	(4)	(5)	(6)
<i>Total crimes against women per 1000 women</i>	0.365 *	0.365 **	0.382 **	0.380 **	0.225 **	0.232 **
	[0.190]	[0.149]	[0.150]	[0.147]	[0.099]	[0.085]
R-squared	0.85	0.9	0.9	0.9	0.95	0.95
Observations	391	391	391	391	391	391
<i>Rapes per 1000 pop</i>	0.199 **	0.199 **	0.208 **	0.203 **	0.148 *	0.107
	[0.086]	[0.076]	[0.085]	[0.082]	[0.072]	[0.078]
R-squared	0.81	0.83	0.83	0.84	0.91	0.92
Observations	391	391	391	391	391	391
<i>Kidnapping of women & girls per 1000 women</i>	0.160 **	0.133 **	0.123 **	0.123 **	0.135 **	0.114 *
	[0.056]	[0.049]	[0.049]	[0.048]	[0.059]	[0.054]
R-squared	0.91	0.92	0.92	0.92	0.96	0.96
Observations	340	340	340	340	340	340
Demographic & economic controls		Y	Y	Y		Y
Control for woman CM		Y	Y	Y		Y
Control for police strength			Y	Y		Y

All regressions include state and year fixed effects.

Standard errors in parantheses, corrected for clustering at state-level.

*, ** and *** indicate significant at 10%, 5% and 1% respectively.

Regression for 17 major states and years 1985-2007. All crime variables are in logs.

Each cell represents the coefficient on the post-reform dummy for the outcome variables with appropriate controls. Post-reform dummy equals 1 for years after the first local government elections with reservations for women.

Demographic & economic controls include literacy, urbanization, female-male ratio, % population in farming and real per capita state domestic product.

See Appendix 1 for crime category definitions.

Table 4: Women's Political Representation and Crimes not Targeted Towards Women

	Women's reservation implemented		
	No controls	Demographic, economic and political controls	Control for police strength
	(1)	(2)	(3)
<i>Kidnapping of men & boys per 1000 men</i>	0.005 [0.135]	-0.003 [0.105]	-0.011 [0.102]
R-squared	0.66	0.68	0.68
Observations	330	330	330
<i>Murders per 1000 pop</i>	-0.133 [0.098]	-0.132 [0.089]	-0.153 [0.109]
R-squared	0.71	0.73	0.75
Observations	391	391	391
<i>Crimes against property per 1000 pop</i>	0.073 [0.073]	0.025 [0.051]	0.023 [0.050]
R-squared	0.82	0.86	0.86
Observations	391	391	391
<i>Crimes against public order per 1000 pop</i>	0.193 ** [0.085]	0.124 [0.075]	0.111 [0.078]
R-squared	0.89	0.92	0.92
Observations	391	391	391
<i>Economic crimes per 1000 pop</i>	0.122 [0.075]	0.104 [0.062]	0.103 [0.064]
R-squared	0.7	0.71	0.71
Observations	391	391	391
Demographic & economic controls		Y	Y
Control for woman CM		Y	Y
Control for police strength			Y

All regressions include state and year fixed effects.

Standard errors in parentheses, corrected for clustering at state-level.

*, ** and *** indicate significant at 10%, 5% and 1% respectively.

Regression for 17 major states and years 1985-2007. All crime variables are in logs.

Each cell represents the coefficient on the post-reform dummy for the outcome variables with appropriate controls. Post-reform dummy equals 1 for years after the first local government elections with reservations for women.

Demographic & economic controls include literacy, urbanization, female-male ratio, % population in farming and real per capita state domestic product.

See Appendix 1 for crime category definitions.

Table 5: Women's Political Representation and Arrest Rates

	Women's reservation implemented					
	Arrests per 1000 people			Chargesheeting rates		
	No controls (1)	Demographic, economic and political controls (2)	Control for police strength (3)	No controls (4)	Demographic, economic and political controls (5)	Control for police strength (6)
<i>All crimes</i>	0.208 *** [0.059]	0.186 *** [0.050]	0.191 *** [0.056]	0.39 [2.114]	0.037 [1.942]	-0.117 [1.917]
R-squared	0.7	0.72	0.72	0.86	0.87	0.87
Observations	391	391	391	289	289	289
<i>Rape</i>	0.122 [0.082]	0.115 [0.071]	0.118 [0.078]	0.824 [0.860]	0.602 [0.958]	0.571 [0.969]
R-squared	0.83	0.85	0.85	0.82	0.83	0.83
Observations	340	340	340	289	289	289
<i>Kidnapping of women</i>	0.191 ** [0.077]	0.184 ** [0.063]	0.177 ** [0.063]			
R-squared	0.85	0.87	0.87			
Observations	323	323	323			
<i>Kidnapping of men</i>	0.05 [0.141]	-0.013 [0.096]	-0.04 [0.098]			
R-squared	0.69	0.72	0.72			
Observations	312	312	312			
<i>Kidnapping</i>				0.159 [2.662]	0.139 [2.218]	-0.451 [2.103]
R-squared				0.69	0.73	0.74
Observations				289	289	289
Demographic & economic controls		Y	Y		Y	Y
Control for woman CM		Y	Y		Y	Y
Control for police strength			Y			Y

All regressions include state and year fixed effects.

Standard errors in brackets, corrected for clustering at state-level.

Regression for 17 major states and years 1985-2007. All arrests variables are in logs.

Demographic & economic controls include literacy, urbanization, female-male ratio, % population in farming and real per capita state domestic product.

Each cell represents the coefficient on the post-reform dummy for the outcome variables with appropriate controls. Post-reform dummy equals 1 for years after the first local government elections with reservations for women.

Table 6A: Women's Political Representation and Police Strength

	Women's reservation implemented		
	No controls	Demographic, economic and political controls	Control for police strength
	(1)	(2)	(3)
<i>Police officers per 1000 population (log)</i>	0.178 [0.168]	0.153 [0.147]	
Observations	391	391	
R-squared	0.83	0.85	
<i>Female police officers per 1000 population (log)</i>	0.006 [0.009]	0.005 [0.008]	0.001 [0.006]
Observations	337	337	337
R-squared	0.63	0.71	0.76
Demographic & economic controls		Y	Y
Control for woman CM		Y	Y
Control for police strength			Y

All regressions include state and year fixed effects. Standard errors in brackets, corrected for clustering at state-level.

Demographic & economic controls include literacy, urbanization, female-male ratio, % population in farming and real per capita state domestic product.

Each cell represents the coefficient on the post-reform dummy for the outcome variables with appropriate controls. Post-reform dummy equals 1 for years after the first local government elections with reservations for women.

Table 6B: Women's Political Representation and Police Satisfaction

	Approached the police in last 5 years		Police acted efficiently and the case was solved		Police did not register the complaint		Paid Bribe to Police	
	Female	Male	Female	Male	Female	Male	Female	Male
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<i>Village council head position reserved for women in 2000</i>	0.024 [0.023]	0.017 [0.013]	0.120 * [0.069]	-0.039 [0.026]	-0.023 [0.087]	0.07 [0.045]	-0.356 * [0.211]	0.006 [0.051]
Observations	1514	9282	132	900	132	900	49	433
R-squared	0.07	0.03	0.23	0.07	0.29	0.13	0.54	0.11

Individual level responses from the Millennial Survey

Standard errors in brackets, clustered at the Gram Panchayat (village council) level. All regressions control for state fixed effects, village class dummies, and individual characteristics (religion, caste, education and occupation).

Columns (3)-(8) only for those who report having some interaction with the police.

Table 7a: The Effect of Women's Political Representation at District Level

	<i>Crimes against women per 1000 women</i>				<i>Rapes per 1000 women</i>				<i>Kidnapping of women & girls per 1000 women</i>			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
District Chairperson reserved for women	0.046 (0.030)		-2.058*** (0.514)	-0.286*** (0.086)	0.018 (0.031)		-0.626 (0.494)	0.019 (0.092)	0.006 (0.036)		0.124 (0.603)	0.050 (0.094)
Cumulative # years with chairperson post reserved for women		0.034** (0.015)				0.000 (0.013)				-0.003 (0.013)		
District Chairperson reserved for women *Female/Male ratio			2.206*** (0.541)				0.675 (0.511)				-0.123 (0.639)	
District Chairperson reserved for women *Femaleliteracy				0.702*** (0.179)			-0.002 (0.187)					-0.093 (0.197)
Women's reservation implemented at state level	0.168** (0.073)	0.190*** (0.071)	0.188*** (0.067)	0.197*** (0.068)	0.009 (0.046)	0.010 (0.046)	0.013 (0.045)	0.009 (0.046)	0.172*** (0.051)	0.171*** (0.052)	0.171*** (0.051)	0.169*** (0.052)
Observations	3943	3943	3943	3943	3941	3941	3941	3941	3682	3682	3682	3682
R-squared	0.86	0.87	0.87	0.87	0.65	0.65	0.65	0.65	0.72	0.72	0.72	0.72
District FE	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Demographic controls	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

Regressions are 188 for districts in 10 major states and years 1987-2007. All crime variables are in logs. All regressions include year fixed effects. Demographic controls include female literacy, urbanization and female-male ratio. Standard errors in parantheses, clustered at district-level. *, ** and *** indicate significant at 10%, 5% and 1% respectively.

Table 7b: The Effect of Women's Political Representation at State Level

	Proportion of women legislators	
	OLS (1)	IV (2)
<i>Crimes against women per 1000 women</i>	2.643 [1.980]	5.125 * [2.824]
R-squared	0.89	0.89
Observations	391	391
<i>Rapes per 1000 pop</i>	1.007 [1.223]	0.982 [1.701]
R-squared	0.82	0.82
Observations	391	391
<i>Kidnapping of women & girls per 1000 women</i>	1.243 [0.987]	1.212 [2.005]
R-squared	0.92	0.92
Observations	340	340
State FE	Y	Y
Demographic controls	Y	Y
Economic controls	Y	Y
Control for woman CM	Y	Y
Control for police strength	Y	Y

Regressions are for 17 major states and years 1985-2007. All regressions include year fixed effects. Standard errors in brackets, clustered at the state-level. *, ** and *** indicate significant at 10%, 5% and 1% respectively. IV regression in column (2) using the proportion of women legislators winning in close elections (less than 5% vote margin) as an instrument for the overall proportion of women legislators. Demographic controls include female literacy, urbanization and female-male ratio; economic controls include % population in farming and real per capita state domestic product.

Table 8: SC/ST Political Representation and Crimes Against SC/ST

	Crimes against SC				Crimes against ST			
	No controls	Demographic, economic and political controls		Crime variables not logged	No controls	Demographic, economic and political controls		Crime variables not logged
		Control for police strength				Control for police strength		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<i>Total crimes against SC/ST per 1000 SC/ST pop</i>	0.066 [0.440]	0.377 [0.253]	0.457 ** [0.184]	0.066 ** [0.028]	0.153 [0.307]	0.141 [0.333]	0.144 [0.332]	-0.023 [0.054]
R-squared	0.81	0.86	0.87	0.89	0.53	0.61	0.61	0.55
Observations	168	168	168	175	134	134	134	145
<i>Murders of SC/ST per 1000 SC/ST pop</i>	0.209 [0.186]	0.262 [0.222]	0.306 [0.241]	-0.0001 [0.0002]	0.625 [0.596]	0.573 [0.426]	0.583 [0.434]	-0.001 [0.001]
R-squared	0.78	0.81	0.82	0.82	0.54	0.61	0.62	0.41
Observations	146	146	146	175	103	103	103	145
<i>Rapes of SC/ST per 1000 SC/ST pop</i>	0.148 [0.115]	0.141 [0.160]	0.151 [0.161]	0.0005 [0.0005]	0.004 [0.494]	-0.252 [0.447]	-0.237 [0.446]	-0.001 [0.002]
R-squared	0.79	0.83	0.83	0.87	0.68	0.74	0.74	0.43
Observations	157	157	157	175	112	112	112	145
<i>Atrocities against SC per 1000 SC/ST pop</i>	0.841 ** [0.328]	0.991 *** [0.310]	0.991 *** [0.313]	0.041 ** [0.014]	0.086 [0.365]	0.027 [0.565]	-0.02 [0.598]	-0.009 [0.018]
R-squared	0.72	0.8	0.8	0.59	0.44	0.6	0.62	0.47
Observations	127	127	127	175	104	104	104	145
<i>Civil Rights violations per 1000 SC/ST pop</i>	1.134 ** [0.366]	1.420 *** [0.392]	1.372 ** [0.440]	-0.002 [0.005]	0.037 [0.941]	0.235 [0.695]	0.183 [0.772]	0.00002 [0.002]
R-squared	0.71	0.79	0.79	0.64	0.75	0.9	0.9	0.6
Observations	132	132	132	175	64	64	64	145
Demographic & economic controls		Y	Y	Y		Y	Y	Y
Control for woman CM		Y	Y	Y		Y	Y	Y
Control for police strength			Y	Y			Y	Y

All regressions include state and year fixed effects.

Standard errors in brackets, corrected for clustering at state-level.

Regression for 11 major states and years 1992-2007. Crime variables are in logs for (1)-(3) and (5)-(7).

Demographic & economic controls include literacy, urbanization, female-male ratio, % population in farming and real per capita state domestic product.

Appendix 1: Definition of Major Crime Categories

Crime	Definition	Prosecuted Under
<u>Crimes against women</u>		
Rape	Sexual intercourse with a woman under any of the following circumstances: 1) Against her will; 2) Without her consent; 3) With her consent, when her consent has been obtained by putting her or any person in whom she is interested in fear of death or of hurt; 4) With her consent, when the man knows that he is not her husband, and that her consent is given because she believes that he is another man to whom she is or believes herself to be lawfully married; 5) With her consent, when, at the time of giving such consent, by reason of unsoundness of mind or intoxication or the administration by him personally or through another of any stupefying or unwholesome substance, she is unable to understand the nature and consequences of that to which she gives consent; 6) With or without her consent, when she is under sixteen years of age.	Section 376 of Indian Penal Code
Kidnapping or abduction	Taking or enticing any minor under sixteen years of age if a male, or under eighteen years of age if a female, or any person of unsound mind, out of the keeping of the lawful guardian of such minor or person of unsound mind, without the consent of such guardian; compelling by force, or by any deceitful means, inducing any person to go from any place.	Sections 363-369, 371-373 of Indian Penal Code
Dowry death	Where the death of a woman is caused by any burns or bodily injury or occurs otherwise than under normal circumstances within seven years of her marriage and it is shown that soon before her death she was subjected to cruelty or harassment by her husband or any relative of her husband for, or in connection with, any demand for dowry, such death shall be called "dowry death", and such husband or relative shall be deemed to have caused her death.	Section 304B of Indian Penal Code
Molestation	Assault or criminal force to woman with intent to outrage her modesty	Section 354 of Indian Penal Code
Sexual harassment	Word, gesture or act intended to insult the modesty of a woman	Section 509 of Indian Penal Code
Importation of girl from foreign country	Importing into India from any country outside India or from the State of Jammu and Kashmir any girl under the age of twenty-one years with intent that she may be, or knowing it to be likely that she will be, forced or seduced to illicit intercourse with another person.	Section 366B of Indian Penal Code
Cruelty by husband or relatives	Any willful conduct which is of such nature as is likely to drive the woman to commit suicide or to cause grave injury or danger to life, limb or health (whether mental or physical) of the woman; or harassment of the woman where such harassment is with a view to coercing her or any person related to her to meet any unlawful demand for any property or valuable security is on account of failures by her or any person related to her to meet such demand.	Section 498A of Indian Penal Code
Immoral traffic	A prostitute who seduces or solicits shall be prosecuted. A client is guilty of consorting with prostitutes and can be charged if he engages in sex acts with a sex worker within 200 yards of a public place or "notified area". Babus or pimps or live-in lovers who live off a prostitute's earnings are guilty of a crime. Any adult male living with a prostitute is assumed to be guilty unless he can prove otherwise.	Immoral Traffic (Prevention) Act 1956

Appendix 1: Definition of Major Crime Categories (continued)

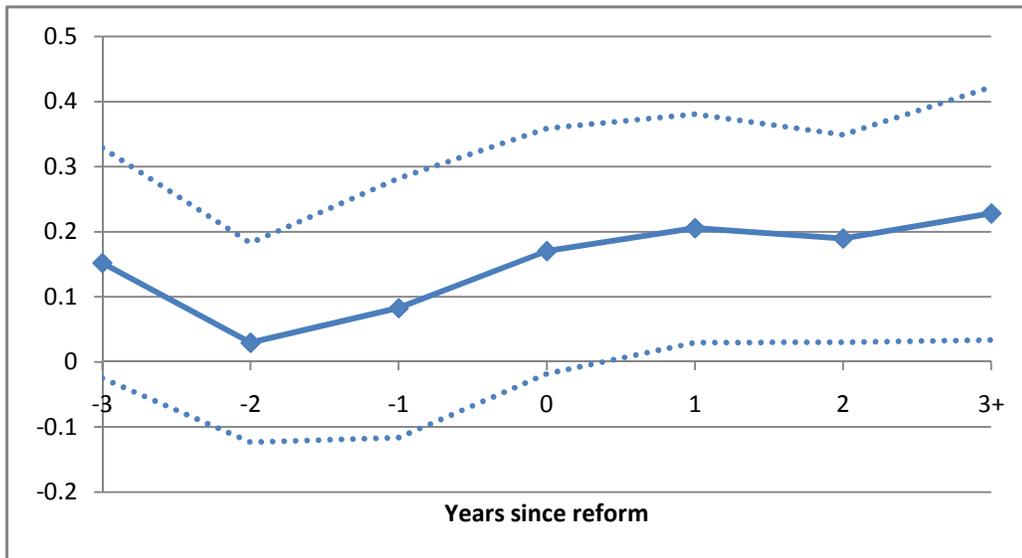
Crime	Definition	Prosecuted Under
Giving and receiving of dowry	If any person, after the commencement of this Act, gives or takes or abets the giving or taking of dowry, he shall be punishable.	Dowry Prohibition Act 1961
Pornography	No person shall publish, or cause to be published, or arrange or take part in the publication or exhibition of, any advertisement which contains indecent representation of women in any form. No person shall produce or cause to be produced, sell, let to hire, distribute, circulate or send by post any book, pamphlet, paper, slide, film, writing, drawing, painting, photograph, representation or figure which contains indecent representation of women in any form.	Indecent Representation of Women (Prohibition) Act 1986
Sati (burning of widows)	Whoever attempts to commit Sati and does any act towards such commission shall be punishable; if any person commits Sati, whoever, abets the commission of such Sati, either directly or indirectly, shall be punishable.	Sati Prevention Act 1987
<u>Crimes against SCs/STs</u>		
Civil rights violations	Prohibits the practice of "untouchability" i.e. restricting access to public places, water sources, places of worship, practice of any profession, occupation of residential premises etc on grounds of "untouchability"	Protection of Civil Rights Act 1955
Atrocities against SC/STs	Prohibits a variety of atrocities towards SCs and STs, committed by non-SCs/STs, including stripping, insulting, forced labor and sexual exploitation. Also penalizes the giving of false or fabricated evidence aimed at implicating SC/ST members.	SC/ST Prevention of Atrocities Act 1989
<u>Other crimes</u>		
Murder	Culpable homicide is murder if the act by which the death is caused is done with intention of causing death or if it is done with the intention of causing such bodily injury as the offender knows to be likely to cause the death of the person to whom the harm is caused.	Section 302, 303 of Indian Penal Code
Crimes against property	Theft, extortion, robbery, burglary, dacoity (robbery by five or more persons jointly), preparation to commit dacoity	Sections 392-402, 449-452, 454, 455, 457-460, 379-382 of Indian Penal Code
Economic crimes	Criminal breach of trust, cheating, counterfeiting	Sections 406-409, 419, 420, 231-254, 489A-489D of Indian Penal Code
Crimes against public order	Rioting, arson	Section 143-145, 147-151, 153, 153A, 153B, 157, 158, 160, 435, 436, 438 of Indian Penal Code

Source. Prosecution sections from Crime in India (2008); definitions from Indian Penal Code, 26th Edition, 1987 and

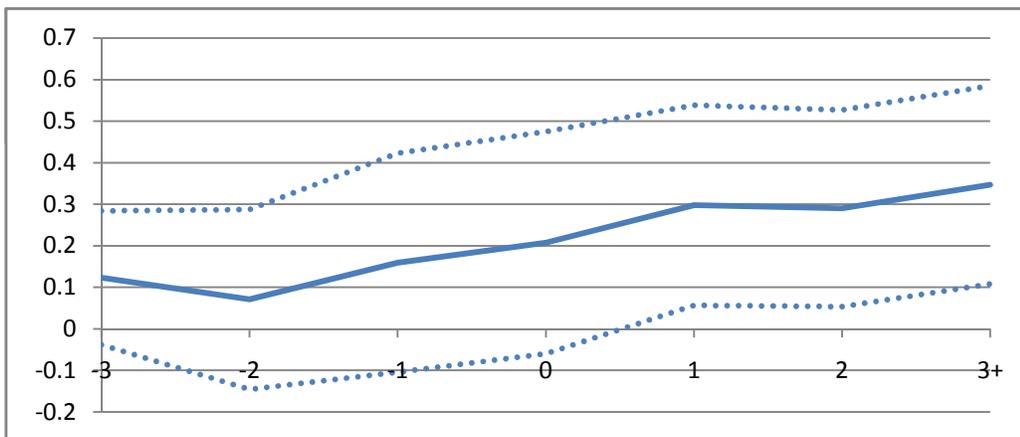
<http://www.vakilno1.com/bareacts/indianpenalcode/indianpenalcode.htm>, accessed November 2010.

Figure 1: Year-by-year coefficients

Panel A: Kidnapping of women and girls per 1000 population (log)



Panel B: Arrests for kidnapping of women and girls per 1000 population (log)



Solid lines represent the coefficients from a regression of the dependent variable on dummies for 1, 2 and 3 or more years after the Panchayati Raj reforms, as well as 1, 2 and 3 years before the reform. Dotted lines represent lower and upper 95% confidence intervals.

Figure 2: Murders of women before and after women's political representation

Figure 2A: Assam

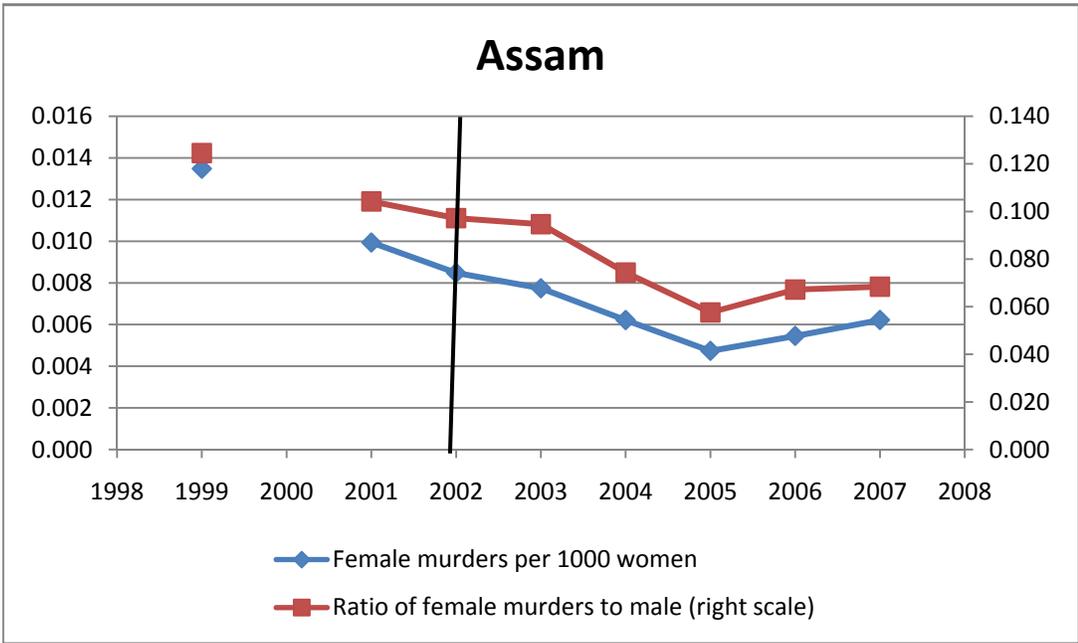


Figure 2B: Jammu & Kashmir

