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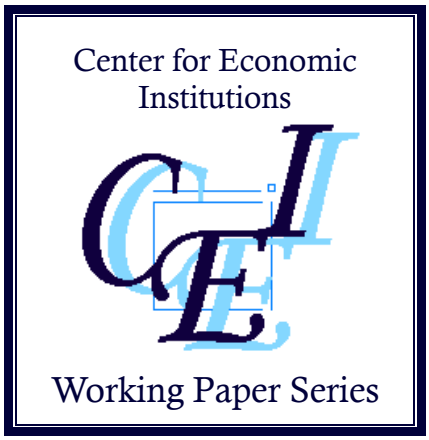

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Does Political Reservation Affect Voting Behavior? Empirical Evidence from India[1]

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Abstract

This paper empirically examines the impact of political reservation for disadvantaged groups on voting behavior. Using microdata from the National Election Study of the 2004 parliamentary elections in India, we find that in a reserved constituency, where only members of the disadvantaged castes can stand for election, voters of the disadvantaged castes are encouraged to vote. On the other hand, the system of constituency reservation does not have any impact on the turnout of voters belonging to other groups, including relatively upper caste voters. This finding suggests that political reservation does not crowd out the electoral participation of other groups. These voters, however, tend to vote for the right-wing political party in reserved constituencies. This implies a possibility that the political reservation might provoke a social cleavage along castes in Indian politics.

Keywords: political reservation, affirmative action, voter turnout, political economy

JEL Classification: J15, J38, D72

1. Introduction

Historically disadvantaged groups, such as women and ethnic/religious minorities, have faced political underrepresentation relative to their share in population. Several countries have introduced a political quota system to guarantee the representation of specific groups in the legislature as affirmative action.[3] Political affirmative action of this type is a highly controversial issue. While some empirical studies show the positive effect of political affirmative action on intended beneficiaries,[4] others raise several concerns due to the imbalance of representation created by affirmative action. The first concern is equity. Political affirmative action in favor of disadvantaged groups crowds out the representation of other groups and it may thus discourage their electoral participation. On the other hand, it may increase the political consciousness of disadvantaged groups. The second concern is an increasing social cleavage between disadvantaged and other groups, potentially driven by the resentment from the other groups or by the labeling of voters' identity (Weiner 2001). To shed light on these concerns, this paper empirically examines the consequences of political affirmative action on the voting behavior of disadvantaged and other groups

[3] For example, Belgium, Lebanon, Slovenia, and Zimbabwe employ special quotas to guarantee the representation of ethnic minorities (Lijphart 1986) and more than 30 countries currently employ the quota system for women in parliaments (World Bank 2001).

[4] Pande (2003) demonstrates that the reservation of seats for disadvantaged groups in the state assembly of India increased the transfers targeted to disadvantaged groups. At the village level in India, an increasing number of empirical studies show that political reservation for disadvantaged people affected the allocation of local public goods (Chattopadhyay and Duflo 2004, Besley et al. 2004, Duflo et al. 2005, Ban and Rao 2008, Bardhan et al. 2010, Munshi and Rosenzweig 2010). Iyer et al. (2012) show that political reservation for women in village councils in India contributed to an increase in the reporting of crimes against women, not due to an increased number of actual crimes but due to an increased reporting of crimes. Duflo (2005) reviews the studies on political reservation in various countries, concluding that there is a significant reallocation of public goods in favor of the group in power.

Regarding the impact of affirmative action on women's voting behavior, several authors have implemented an empirical study. For example, Chattopadhyay and Duflo (2004) show that political reservation for women in India promotes the participation of women in village council, while Ban and Rao (2008) find no evidence that political reservation affects the participation. Beaman et al. (2009) provide further evidence that the political reservation increases the probability for women to win the election for the village head by improving voters' attitude toward women. Bhavnani (2009) also demonstrates the positive effects of political affirmative action on women's chance for winning the election. On the other hand, studies on the effect of political affirmative action on ethnic/religious minorities or national elections seem to be lacking. In addition, little is known about how political affirmative action changes voting behavior, such as turnout and party choice. This question is important for the assessment of political reservation comparing the benefit for disadvantaged groups and the impingement on the freedom and choices of other groups.

We investigate this empirical question for the case of political reservation of parliamentary elections in India, where the hierarchical caste system has led to the economic deprivation of lower castes or tribes. To reduce the economic and social inequality, India has adopted affirmative action in the form of reserving seats in electoral constituencies since 1950. The important features of political reservation in India is that, in reserved constituencies, only candidates belonging to disadvantaged castes or disadvantaged tribes can

stand for election while the entire electorate cast its vote, regardless of the individual social affiliations. Voters belonging to non-reserved groups, therefore, have to cast their votes to a candidate belonging to disadvantaged castes or tribes.

This institutional setup raises a concern how political reservation changes voters' behavior such as voter turnout or party choice. Washington (2006) shows that black candidates in elections for congressmen and governors in the US increased the turnout rates of both black and white voters. This confirms that the affiliation of candidates is an important variable for turnout decisions. When candidates in reserved constituencies are restricted to individuals belonging to disadvantaged groups, such as in the quota system adopted in India, voters belonging to the disadvantaged groups may enjoy the election and be encouraged to vote. On the other hand, voters belonging to other groups may be discouraged to vote and boycott the election. Another possibility is that if the majority of voters in a reserved constituency do not belong to the disadvantaged groups,[5] candidates in a reserved constituency need to appeal to voters belonging to the other groups to win the election. When such voters in reserved constituencies pay sufficient attention to policies advocated by candidates, they have an additional incentive to go to the election and vote to a candidate who favors policies toward groups other than the disadvantaged groups.

The question as to how political reservation changes the voters' attitude is thus an

[5] This is indeed the case in India regarding constituencies reserved for disadvantaged castes (Galanter 1984).

empirical one. Nevertheless, there is no direct empirical investigation of this issue in the existing literature.[6] The reason could be that it is difficult to observe the difference in voting behavior according to caste or religion because voting is to be conducted anonymously. To overcome this difficulty, we take advantage of microdata of voters collected as part of the National Election Study 2004 (NES04), which is the most comprehensive survey on elections in developing countries.

Through the empirical investigation of the Indian case, this paper contributes to the literature in three major ways. First, we show that the political reservation for disadvantaged castes leads to a statistically significant increase of 3.6 percentage points in the turnout rate of voters belonging to these castes. This effect is politically desirable since voter turnout is the most important starting point in the process of policy making under a democratic system.[7] This finding adds to the nascent literature on effects of political reservation on political participation of disadvantaged groups. Second, we find insignificant effects of political reservation on voters belonging to non-reserved groups. This implies that they do not boycott the election in reserved constituencies, quietly accepting political reservation in the Indian

[6] Chin and Prakash (2011) point out the importance of assessing the effect of political reservation not only on disadvantaged groups but also on other groups. They do not separate the two effects, however. They instead investigate the overall effect on poverty reduction at the state level and show that the political reservation for disadvantaged tribes reduces poverty while that for disadvantaged castes has no impact on poverty.

[7] According to Meltzer and Scott (1981), extending the franchise to the poor implies that more redistribution will be chosen by changing the preference of the median voter. Since an increase in the turnout of disadvantaged groups also shifts the preference of the median voter, it promotes policy-making in favor of disadvantaged groups. While many countries adopt universal suffrage, the turnout of disadvantaged groups is low. Gine and Mansuri (2011) demonstrate that the election campaign is useful for increasing the turnout of women.

electoral system. Third, we find that such voters change their party choice and tend to cast their vote to the party mainly supported by upper castes voters. This suggests a possibility that the political reservation might provoke a social cleavage along castes in Indian politics.

The rest of the paper is organized as follows. Section 2 introduces the institutional background of political reservation in India. Section 3 discusses why the political reservation affects voting behavior. Section 4 explains the data and the methodology. Section 5 shows the results of the empirical analysis. The final section concludes.

2. Institutional Background

Since 1950, the Constitution of India has introduced several affirmative-action provisions to improve the social and economic conditions of disadvantaged groups. These provisions guarantee them seats in the national legislature called *Lok Sabha* (henceforth referred to as 'parliament' to indicate this legislature), in state legislatures called the State Assembly (referred to as 'assembly' below), and in village *Panchayats*. The provisions also guarantee quotas in educational institutions and posts in a certain proportion of government jobs. Articles 341 and 342 of the Constitution include a list of castes and tribes entitled to such provisions, which are referred to as Scheduled Castes (SCs) and Scheduled Tribes (STs).[8] The lists of SCs and STs have been modified over the years.

[8]A more precise definition of SCs and STs is given by Pande (2003).

According to the 2001 Population Census, the SC and ST population constitutes approximately 16% and 8% of the Indian population, respectively. Article 332 of the Indian Constitution provides for political reservation in the parliamentary and assembly elections for SC/STs. In a constituency reserved for SCs (called 'SC constituency' in the following sections), only individuals belonging to a caste included in the list of SCs can stand for election. Similarly, in a constituency reserved for STs (called 'ST constituency' below), only individuals belonging to a tribe included in the list of STs can stand for election. In both SC and ST constituencies, the entire electorate casts its vote regardless of the individual caste and tribal affiliations.

The procedure for determining reserved parliamentary constituencies is as follows. First, the number of reserved seats is assigned to a state according to the population of SC/STs in the state. Second, within the state, the status of SC/ST constituency is allocated according to their population share. Third, in the case of SC constituencies, the final status is adjusted so that the reserved constituencies are spatially dispersed within the state. The share of population is, therefore, the most important decisive variable on whether a constituency is reserved or not. It should also be added that the boundaries and reservation status of every constituency had been fixed from 1977 to 2004 parliamentary elections. The reservation status for 2004 parliamentary election was determined based on the 1971 population census.

Because the SC population is widely spread within a state, these voters are a minority population in every constituency, irrespective of its reservation status. At the same time, ST voters live in geographic isolation, making them the majority population in roughly half of ST constituencies (Galanter 1984).

Despite the affirmative action, the disparity in the living standards between SC/ST households and other households remains stark. For example, Kurosaki (2011) uses microdata on the consumption expenditures in the 61st NSS (2004/05) and shows that the poverty head count index among SC households was 43.8% and that among ST households was 37.9%, much higher than that among non-SC/STs households (this figure was 17.0% for OBCs [Other Backward Classes], for example). He also shows that the within-group inequality was substantial among SC and ST households, which is consistent with the view that the benefits of the affirmative action have been distributed unequally within the disadvantaged group.

3. Why Do Reserved Constituencies Affect Voting Behavior?

To motivate our empirical models, this section briefly surveys the theoretical literature on a rational citizen's decision to vote or not. A rational citizen considers the difference in his/her expected utility in situations when his/her favorite candidate is elected and when the opponent wins. According to probabilistic voting models (Lindbeck and

Weibull 1987; Coughlin 1992; Persson and Tabellini 2000), the voter's utility is a function of ideology and policy. In India, caste ideology has been especially important in politics (Osborn 2001). Consequently, SC constituencies increase the turnout of SC voters by increasing their ideology-driven utility and decrease the turnout of non-SC voters by decreasing their ideology-driven utility since they have to cast their vote among lower caste candidates. However, if we take into account the cost of voting, the prediction could be that the political reservation through the ideology route may decrease the turnout of both groups since the individual's participation does not affect the results; that is, no matter what, the winner belongs to SCs.

On the other hand, if a voter considers not only ideology but also policy, non-SC voters might be encouraged to vote in a SC constituency through the following mechanism. Since non-SC voters are usually the majority in a SC constituency, SC candidates need to appeal to non-SC voters to win the election. For example, when the competition in a SC constituency is between a SC candidate who accommodates with the interests of the majority and another SC candidate who caters to the SC residents, the difference between the utility if the former candidate wins and if the latter candidate wins becomes substantial for non-SC voters. In such a case, non-SC voters are more encouraged to vote in a SC constituency than in a general constituency. Both SC and non-SC voters can, therefore, be encouraged to vote in reserved constituencies.

There are explanations other than those based on probabilistic voting models that predict the relationship between reservation and voter turnout. For example, political reservation may raise the SC turnout owing to an increase in knowledge or focus on the elections.[9] In reserved constituencies, the press and political parties may give more attention to policies focused on SCs.

In summary, how the political reservation affects the turnout of SC and other voters is theoretically ambiguous. This paper, therefore, empirically investigates how the political reservation affects voter turnout.[10]

4. Data and Methodology

4.1. Data

Our main data source is the National Election Study 2004 (NES04) conducted by the Centre for the Study of Developing Societies (CSDS). It offers the largest and most comprehensive election database in India. Microdata on approximately 27,000 voters spread across 420 randomly selected parliamentary constituencies are available for our analysis. A sample of voters was interviewed after the 2004 parliamentary elections on their voting behavior, political opinion, and background. Variables at hand include voting behavior

[9] Banerjee et al. (2011) show that the campaign with information on qualifications of candidates and the performance of incumbents increased the voter turnout in Delhi.

[10] Due to the smaller number of ST voters/constituencies and the spatial concentration of ST voters in such constituencies, it is difficult to obtain precise estimates for the impact of ST reservation. This paper, therefore, shows only the results for the SC reservation impact. The results for the ST reservation impact are available in Mori and Kurosaki (2011).

(turnout and party to vote), region (parliamentary and assembly constituencies), caste (SC, ST, OBC, or others), and religion (Hindu, Muslim, or others).

Similar to voting surveys in other countries (Silver et al. 1986), NES04 also suffers from the poblem of over-reporting, that is, while the turnout rate released by the Election Commission of India is 58.1%, the turnout calculated by NES04 is 87.2%. Given this magnitude of over-reporting, we need to investigate whether the use of NES04 microdata enables us a reliable test for the difference in voting behavior among different groups of voters. As shown by Hausman et al. (1998), the misclassification in the dependent variable results in a bias on the regression coefficients but the extent of the bias is proportional across all explanatory variables if the misclassification probability is independent of the explanatory variables. If the extent of the bias is proportional across all explanatory variables, the test for the difference in voting behavior among different groups of voters remains valid, even with the existence of over-reporting. Therefore, we run a regression model with the constituency-level over-reporting rate as the dependent variable and variables used in our empirical analysis as the explanatory variables. As shown in the Appendix 1, none of these explanatory variables have a statistically significant coefficient, confirming the econometric validity of our analysis using the NES04 microdata.

To control for other demographic variables that are likely to have an effect on voter turnout, in the regression, we use the literacy rate, the population share of the rural population,

SCs, and workers in ten industrial categories. Data on these variables are not available at the constituency level. Therefore, we compiled these variables from the 1971 Population Census. Since the boundaries of the census districts are different from those of the constituencies, we generated constituency-level data from census information using weights based on the share each constituency occupies in each of census districts.[11]

4.2. Methodology

To analyze the effect of political reservation on voter turnout, we compare the voter turnout between reserved constituencies and general constituencies. The main concern is the existence of omitted variables which are correlated with reservation status and also have an impact on the turnout. For example, reserved constituencies may differ from general constituencies in ways that also affect the turnout, such as the level of development or demographic variables. To deal with this problem, we use the institutional feature that can be used to control the omitted variable bias. As described in section 2, the reservation status is based on the SC population share in the 1971 Population Census. Therefore, it is important to control the covariation of voting behavior with the population share of SCs.[12] To control it in

[11] This methodology was used by Banerjee and Somanathan (2007). Banerjee and Pande (2009) also used this weight. We thank Rohini Somonathan for kindly providing the mapping data.

[12] The idea of this specification is based on the regression discontinuity design since the dichotomous treatment – reservation status – is a discontinuous function of an observable variable, the SC population share. Using the dummy for reserved constituencies, we estimate the jump between non-SC constituencies where the population share of the disadvantaged group is barely less than the threshold for a reserved constituency on the one hand and SC constituencies where the population share of the disadvantaged group is barely more than the threshold. As we do not know the thresholds of SC population for the reservation

a flexible way, we include higher order polynomials of the SC population share as explanatory variables. The empirical model is as follows;

$$Y_i^k = b_0^k + b_d^k D_p + b_1^k Z_p + b_2^k Z_p^2 + b_3^k Z_p^3 + X_p \beta^k + State_p^k + \varepsilon_i^k , \qquad (1)$$

where superscript k denotes the group affiliation of voter i (e.g., a SC voter, non-SC voter, or OBC voter) and Y_i is a dummy variable that takes on a value of one if voter i went to vote. D_p is a dummy variable that takes on a value of one if constituency p where voter i resides is designated as a SC constituency. Z_p is the population share of SCs in constituency p, X_p represents demographic variables (the literacy rate, the population share of rural citizens, and the occupational shares), whose coefficient vector β to be estimated, $State_p$ is the state fixed effect, and ε_i is an error term. b's are coefficients to be estimated. Voters are classified into SC and non-SC voters so that separate regressions are implemented. The category of non-SC voters can be further divided. In this paper, we report results when OBCs and other Hindu voters are distinguished.[13] These two sub-categories are picked up from non-SC voters because we expect they might hesitate to vote for lower caste candidates given that they form the majority in almost all constituencies and belong to relatively higher castes.

Econometrically, there are two potential problems in this approach. First, the SC

status, it is difficult to apply the standard regression discontinuity design to the dataset used in this paper.

[13]Other Hindu is defined as Hindu voters other than SCs and OBCs voters. They represent relatively upper caste voters.

population share in constituency p is measured with error. Since data on SC population are not available at the constituency level, we compiled these variables from the 1971 Population Census using weights based on the share that each constituency occupies in each of census districts. In addition, the number of districts in 1971 is 356, which is smaller than that of constituencies. For a robustness check, we also use the SC shares calculated from the 1991 Population Census.[14] Second, as mentioned in Section 2, the spatial dispersal is also considered in assigning the reservation status to a constituency. We cannot completely rule out the possibility that the assignment adjustment was correlated with regional characteristics.

Considering these potential problems, we also estimate the effect of reservation through the difference-in-difference (DID) approach as another robustness check. The DID model for the SC reservation is:

$$Y_i = b_0 + b_1 D_p + b_2 D_i + b_d D_p D_i + X_p \beta + State_p + \varepsilon_i , \quad (2)$$

where b's are coefficients to be estimated, D_p is the dummy variable for a SC constituency and D_i is the dummy variable for a SC voter. Since b_1 controls the unobservable common to all SC constituencies and b_2 controls the unobservable common to all SC voters, the DID

[14]While the use of the 1991 population census has an advantage that the number of districts is 466, much larger than in 1971, it also has a disadvantage that the reservation status was determined based on the information included in the 1971 census (indirect correspondence). Giving the direct correspondence more weight, we use the SC population share based on the 1971 census as the default and that based on the 1991 census as a robustness check

coefficient b_d shows the causal impact of SC reservation on the turnout of SC voters. The DID approach identifies the effect of SC reservation on SC voters using the response of non-SC voters as a reference so that we cannot identify separately the effects of SC reservation on SC and non-SC voters. This is one of the reasons why we prefer to use the former population control approach as our main specification and DID as a robustness check.

5. Results

5.1. Political reservation and turnout

Excluding the union territory, we use 19,138 voters spread over 360 parliament constituencies (60 SC and 300 general constituencies) in 19 states for regression analysis. Table 1 reports the descriptive statistics. While the sample share of SCs is 14.7%, the population share of SCs, according to the 2001 Census, is 16.4%. We regard the NES04 sample to be reasonably representative of the Indian population.

The results based on equation (1) are reported in Table 2. The coefficients for the SC constituency dummies are multiplied by hundred for easy interpretation. Column (1) in Table 2 indicates that SC voters are encouraged to vote in a SC constituency with the turnout rate of SC voters in a SC constituency 3.601 percentage points higher than the turnout rate of SC voters in a general constituency. The difference is not only statistically significant but also politically significant – 3.6 percentage points compared with the national turnout rate of

58.1% in the 2004 parliament election.

As can be seen in column (2), the turnout rate of non-SC voters in a SC constituency is slightly less than that in a general constituency although the difference is statistically insignificant. Examining the possibility of a heterogeneous response among non-SC voters, columns (3) and (4) show the impact of SC reservations on 'other Hindu' and OBC voters. Both the coefficients on the SC constituency dummy are small and statistically insignificant. These findings imply that non-SC voters are not discouraged to vote in a SC constituency, suggesting a general acceptance of political reservation in the Indian electoral system. The robustness check using the 1991 population census is reported in Appendix Table 2. In the case of SC voters, the coefficient on the dummy for reserved constituencies remains significant, slightly larger than that in Table 2. For non-SC voters, the coefficients remain insignificant.

These results are further confirmed by a robustness check that uses the DID approach. As shown in columns (1) and (2) in Table 3, the estimated DID impact of SC reservation is 5.23 and statistically significant. Therefore, the turnout rate of SC voters in a SC constituency is 5.23 percentage points higher than that in a general constituency. All other cross terms have insignificant coefficients.

The results of this section robustly demonstrate that SC voters are encouraged to vote in a SC constituency while non-SC voters are neither encouraged nor discouraged by

reservations for SCs. In the next subsection, we investigate whether this positive effect of SC reservation on voter turnout of SCs spills out voter turnout of SCs in other elections without political reservation.

5.2. Political reservation and habit forming

Given that we robustly found that SC reservation increases SC voters' turnout in the parliamentary elections, could we expect the impact to be sustained if reservations for SCs were abolished? As is often the case with affirmative action, reservation is not a permanent system and is expected to be withdrawn should the day come when there is no political discrimination against disadvantaged groups. Therefore, it is also important to examine how voters in reserved constituencies change their behavior if the political reservation is abolished.[15] It is of course difficult to directly test the effect of a withdrawal of affirmative action since it is not politically easy to end the reservation system. However, it is possible to test this indirectly, which is the theme of this subsection. What follows is an investigation into this issue indirectly using the spatial configuration of SC reservation in the state legislative assembly.

Since the reservation status of parliamentary constituencies had been fixed from 1977 to 2004, the analysis in the previous subsection cannot accurately distinguish whether

[15]Based on a motivation similar to ours, Bhavnavi (2009) investigated the impact of political reservation for women in Indian local elections using the randomized allocation of reservation status. The author insists that the reservation increased the women's chances of winning elections after it is withdrawn.

the positive impact on SC voters is permanent (sustainable in the event of de-reservation) or contingent on the reservation in force (not sustainable in the event of de-reservation). As Gerber (2003) shows, voting is habit forming. Therefore, it is possible that SC voters in reserved constituencies have developed a habit of voting, resulting in a permanent impact. Another possibility is that in reserved constituencies, the political organization of SCs has been developed and the political consciousness of SC voters has been increased. Yadav (1999) demonstrates that, since the 1990s, the number of SC voters who attend election meetings and join the party membership has increased. Therefore, in this subsection, we investigate whether in a general constituency for the parliamentary elections, the turnout rate of SC voters who have experienced a reserved constituency in the assembly elections is higher than that of SC voters who have never experienced the reservation.

Several assembly constituencies are comprised in one parliamentary constituency. The assignment of reserved constituencies for the assembly elections is determined independently from that for the parliament. There are, therefore, voters who belong to a SC constituency for the assembly elections while belonging to a general constituency for the parliament elections. Using this variation, we can identify the indirect effects of the experiment of reserved constituencies in the assembly elections on voter turnout in the parliament elections.

The empirical model is a slightly revised version of equation (1) applied to a part of

SC voters. Instead of using all SC voters excluding those in ST constituencies (column (1), Table 2), we now restrict the sample to SC voters residing in a general constituency for the parliamentary elections. Then D_p is replaced by a dummy for a SC assembly constituency, Z_p is replaced by the SC population share in the assembly constituency calculated from the NES04 data, and the term $X_p \beta^k + State_p^k$ is replaced by the parliamentary constituency fixed effects.[16] Now, the parameter b_d^k shows the difference in voting behavior between those SC voters who have experienced SC reservation and those who have not. If the parameter is positive, it indicates a habit-forming effect.

The results are shown in Table 4. Both the parameters b_d^k are negative, showing the absence of a habit-forming effect. The coefficients are statistically insignificant in both columns (1) and (2). Since these are our favorite specifications, we conclude that the impacts of political reservation are not long-term but tentative.

The negative coefficient in Table 4 appears to suggest that once a SC voter experiences voting in a SC constituency in the state assembly election, he/she is discouraged to vote in a general constituency in the parliament election. This discouragement effect could be explained by a rational voter's behavior with ideology-driven utility and fixed voting cost as follows. A SC voter in a SC assembly constituency and a general parliament constituency compares the benefits of voting in the state assembly election and the national parliamentary

[16] Other demographic variable (X_p) cannot be controlled since there is no mapping information to translate the census data into variables at the assembly constituency level.

elections. Based on the comparative benefits, he/she finds the former more attractive, reducing the probability of voting in the parliamentary elections.

The discouragement effect is also suggested by the DID results reported in Table 5. Equation (3) is extended to include a dummy variable D_p' for SC constituency in the state assembly elections and the coefficient on the cross term of D_i and D_p' identifies the DID effect. The coefficients are around -7 percentage points and statistically significant.

These results robustly suggest the absence of a habit-forming effect connecting the SC reservations in the state assembly elections to the voting behavior for the parliamentary elections. On the contrary, a discouragement effect is suggested. Although not conclusive, our results suggest a possibility that the positive effects of SC reservation on SC voters' turnout will disappear once the reservation is withdrawn.

5.3. Political reservation and party choice

Both of results by the population control approach and DID specification suggested that the turnout rate of non-SC voters in a SC constituency was not statistically different from that in a general constituency (subsection 5.1). However, this does not imply that political reservation does not affect the voting behavior of non-SC voters at all. This subsection examines another aspect of the voting behavior: party choice.

As discussed in Section 3, when the competition in a SC constituency is between a

SC candidate who accommodates the interests of the majority and another SC candidate who caters to the SC residents, a non-SC voter (and especially an upper caste voter) is more likely to vote for the former. In other words, upper caste voters in a SC constituency have stronger incentive to cast their vote in favor of the political party that stands for upper castes than upper caste voters in a general constituency. We thus compare the voter's choice of a political party in a SC constituency and that in a general constituency. If the difference is significant, it shows the effect of political reservation on party choice.

To simplify the analysis, we focus on three parties: Bahujan Samaj Party (BSP), Bharatiya Janata Party (BJP), and Indian National Congress (INC). BSP is a national party mainly supported by SC voters, while BJP's political support is more from among the upper castes. INC supporters are more widely spread across social groups. At the same time, BSP's geographical coverage is more limited than that of BJP and INC.

We use a multinomial logit model to investigate the effect of political reservation on party choice. Both population control approach and DID specification are attempted. The dependent variable is the index variable of party choice from among BJP, INC, BSP, and others. The explanatory variables are the same as those used in subsection 5.1. The constituencies used in regressions are limited to those in which all three parties fielded their candidates. ST constituencies are excluded from the analysis. Our final sample thus constitutes of 9,292 voters (1,553 SC and 7,739 non-SC voters).

The population control results are shown in Table 6. Since the base party is BJP, a positive (negative) coefficient implies that being in a SC constituency increases (decreases) the likelihood that a voter casts his/her vote in favor of INC, BSP, or other parties, relative to BJP. By taking the exponential of the coefficient, we can obtain the relative risk ratio with the choice of BJP as the reference at unity. All the coefficients among SC voters are small and statistically insignificant (column (1)). This result indicates that the party choice of SC voters in a SC constituency is statistically not different from that in a general constituency.

In contrast, the coefficient among non-SC voters to choose BSP relative to BJP is negative and statistically significant (column (2)). As shown in columns (3) and (4), most of this negative effect is attributable to the party choice by other Hindu voters. This finding appears to suggest that non-SC voters in a SC constituency, especially those belonging to upper castes, attempt to rebel against the party supported by SCs.

The DID results[17] reported in Table 7 are not very different from the population control results. For SC voters, choosing a party to vote is not affected by the reservation status of their constituency, while the same choice of other Hindu voters turns largely against BSP if the constituency is reserved for SCs. However, the latter effect is not statistically significant at the conventional level. Furthermore, re-estimating the population control model

[17] The DID multinomial regression results confirm our expectations regarding the general tendency of each group in choosing the political party to vote. Coefficients on the voter's group identity dummies show that SC voters are more likely to vote for BSP, other Hindu voters are more likely to vote for BJP and less for BSP, and OBC voters are more likely to vote for BJP. Since this paper is mainly interested in whether such general tendencies change according to the status of reservation, we only report DID coefficients in Table 7. Full estimation results are available on request.

using the 1991 census information for the SC population share yields results highly similar to those reported in Table 6 (see Appendix Table 3).

This subsection robustly demonstrates that upper castes voters tend to vote to the right-wing party in reserved constituencies. This finding suggests that upper castes voters in reserved constituencies lay a larger weight on the caste ideology of party than upper castes voters in general constituencies. This implies a possibility that the political reservation might accelerate the caste based politics in India. Extending the analysis of party choice to include other parties and incorporating detailed relations of party alliance is left for further research.

6. Conclusion

This paper is the first attempt to quantify how voters belonging to different social groups respond to political affirmative action with respect to voting behavior. Using microdata on voters in an election survey in India, we found several relations unknown in literature. First, political reservation increases the turnout of SC voters in parliamentary constituencies reserved for SCs. This finding indicates that the reservation not only guarantees parliamentary representation but also promotes the mass participation of disadvantaged classes. Second, non-SC voters, including relatively higher caste voters, are not discouraged to vote in SC constituencies but change their vote for the political parties. This implies that they quietly accept political reservation in the Indian electoral system. Third,

within non-reserved parliamentary constituencies, the turnout rate of SC voters in a SC-reserved state assembly constituency is not larger than in a non-reserved assembly constituency. This finding may suggest that the positive impact of SC reservation on the turnout rate of SC voters is likely to disappear if reservation is withdrawn. Fourth, this paper demonstrates that non-SC voters in reserved constituencies are more likely to cast their votes to the party based on upper castes voters than in general constituencies. This suggests the possibility that the political reservation might provoke a social cleavage along castes in Indian politics. These findings therefore clarify how the electoral reservation affects voting behavior empirically. They provide useful information to other countries with ethnic or religious diversity on how advantaged voters accommodate themselves to a political reservation system.

However, there are a few limitations against generalizing our findings. First, the effects of political reservation might be different across states within India, depending on community relations in each state. For example, in the northern and most populous state of Uttar Pradesh, where inter-caste conflicts and the political awakening among SC voters has been observed, it is possible that the political reservation has profound effects on voter turnout of SCs.[18] Second, the effect of political reservation on voting behavior at lower

[18] As a preliminary attempt to investigate the heterogeneity in the effect of political reservation across states, we extended equation (2) to include interaction terms between the dummy for SC reservation and state dummies. Among northern and western states, the effects of political reservation on voter turnout of SCs are positive and large. The results are available on request.

levels (such as local councils and state assemblies) may be different from the effects witnessed at the national parliamentary level. Since the function of governance is different, the utility function of the voter may be also different, depending on the level of councils. Third, since our analysis is static in nature and only exploits the spatial variations in parliamentary constituencies, we cannot derive a firm conclusion on the changes in electorate behavior. The dynamics of changes in voting behavior using previous election surveys is another area for additional extended research. Exploring these issues is left for further study.

References

Ban, R. and V. Rao (2008) "Tokenism or Agency? The Impact of Women's Reservation on Village Democracies in South India," *Economic Development and Cultural Change*, Vol. 56, pp.501-530.

Banerjee, A. and R. Somanathan (2007) "The Political Economy of Public Goods: Some Evidence from India," *Journal of Development Economics*, Vol. 82, pp.287-314.

Banerjee, A., S. Kumar, R. Pande, and F. Su (2011) "Do Informed Voters Make Better Choices? Experimental Evidence from Urban India," *mimeo*.

Banerjee, A. and R. Pande (2009) "Parichal Politics: Ethnic Preferences and Politician Corruption", *mimeo*.

Beaman, L., R. Chattopadhyay, E. Duflo, R. Pande, and P. Topalova (2009) "Powerful Women: Does Exposure Reduce Bias?," *Quarterly Journal of Economics*, Vol. 124, pp.1497-1540.

Besley, T., R. Pande, L. Rahman, and V. Rao (2004) "The Politics of Public Good Provision: Evidence from Indian Local Government," *Journal of the European Economic Association*, Vol.2, pp.416-426.

Bhardhan, P., D. Mookherjee and M. P. Torrado (2010) "Impact of Political Reservations in West Bengal Local Governments on Anti-Poverty Targeting," *Journal of Globalization and Development*, Vol. 1, Article 5.

Bhavnani, R. (2009) "Do Electoral Quotas Work after They Are Withdrawn? Evidence from a Natural Experiment in India," *American Political Science Review*, Vol.103, pp.23-35.

Chattopadhyay, R. and E. Duflo (2004) "Women as Policy Makers: Evidence from a Randomized Policy Experiment in India," *Econometrica*, Vol. 72, pp.1409-1443.

Chin A. and N. Prakash (2011) "The Redistributive Effects of Political Reservation for Minorities: Evidence from India," *Journal of Development Economics*, Vol.96, pp.265-277.

Coughlin, P. J. (1992) *Probabilistic Voting Theory*, New York: Cambridge University Press.

Duflo, E. (2005) "Why Political Reservation?," *Journal of the European Economic Association*, Vol. 3, pp.669-678.

Duflo, E., G. Fischer and R. Chattopadhyay (2005) "Efficiency and Rent Seeking in Local

Government: Evidence from Randomized Policy Experiments in India," *MIT Working Paper.*

Ferreira, F. and J. Gyourko (2009) "Do Political Parties Matter? Evidence from U.S. Cities," *Quarterly Journal of Economics*, Vol. 124, pp.399-422.

Galanter, M. (1984) "Compensatory Discrimination in Political Reservation," *Economic and Political Weekly*, Vol. 14, pp.437-454.

Gerber, A. S., D. P. Green, and R. Shachar (2003) "Voting May Be Habit-Forming: Evidence from a Randomized Field Experiment," *American Journal of Political Science,* Vol. 47, pp.540-550.

Gine, X. and G. Mansuri (2011) "Together We Will: Experimental Evidence on Female Voting Behavior in Pakistan," *mimeo.*

Hausman, L. A., J. Abrevaya, and F. M. Scott-Morton (1998) "Misclassification of the Dependent Variable in a Discrete-Response Setting," *Journal of Econometrics,* Vol. 87, pp.239-269.

Iyer, L., A. Mani, P. Mishra, and P. Topalova (2012) "The Power of Political Voice: Women's Political Representation and Crime in India," *American Economic Journal: Applied Economics,* Vol. 4, pp.165-193.

Kurosaki, T. (2011) "Economic Inequality in South Asia," in R. Jha (ed.), *Routledge Handbook of South Asian Economics,* Oxon, UK: Routledge, pp. 61-75.

Lee, D. (2008) "Randomized Experiments from Non-random Selection in U.S. House Elections," *Journal of Econometrics*, Vol. 142, pp.675-697.

Lijphart, A. (1986) "Proportionality by Non-PR Methods: Ethnic Representation in Belgium, Cyprus, Lebanon, New Zealand, West Germany and Zimbabwe." In *Electoral Laws and their Political Consequences*, ed. B. Grofman and A. Lijphart. New York: Agathon Press, pp. 113–23.

Lindbeck, A. and J. Weibull (1987) "Balanced-Budget Redistribution as the Outcome of Political Competition," *Public Choice*, Vol. 52, pp.272-297.

Meltzer, A. and R. Scott (1981) "A Rational Theory of the Size of the Government," *Journal of Political Economy,* Vol. 89, pp.914-27.

Mori, Y. and T. Kurosaki (2011) "Does Political Reservation Affect Voting Behavior? Empirical Evidence from India," *PRIMCED / Hitotsubashi GCOE Discussion Paper Series*.

Munshi, K. and M. Rosenzweig (2010) “Networks, Commitment, and Competence: Caste in Indian Local Politics,” *mimeo*.

Osborne, E. (2001) “Culture, Development, and Government: Reservation in India,” *Economic Development and Cultural Change,* Vol. 49, pp.659-689.

Pande, R. (2003) “Can Mandated Political Representation Increase Policy Influence for Disadvantaged Minorities? Theory and Evidence from India,” *American Economic Review*, Vol. 93, pp.1132-1151.

Persson, T. and G. Tabellini (2000) *Political Economics: Explaining Economic Policy*, Cambridge, MA: MIT Press.

Silver, B., B. Anderson, and P. Abramson (1986) “Who Overreports Voting?” *American Political Science Review*, Vol. 80, pp.613-624.

Washington, E. (2006) “How Black Candidates Affect Voter Turnout,” *Quarterly Journal of Economics,* Vol. 121, pp. 973-998.

Weiner, M. (2001) "The Struggle for Equality: Caste in Indian Politics," in Kohli, A. (ed.), *The Success of India's Democracy*, Cambridge University Press, pp.193-225.

Wolfinger, R. and S. Rosenstone (1980) *Who Votes?*, Yale University Press

World Bank (2001) *Engendering Development: Through Gender Equality in Rights, Resources, and Voice*, Oxford: Oxford University Press and World Bank.

Yadav, Y. (1999) “Understanding the Second Democratic Upsurge: Trends of Bahujan Participation in Electoral Politics in the 1990s,” in F. Frankel, Z. Hasan, R. Bhargava, and B. Arora (eds.), *Transforming India*, Oxford: Oxford University Press, pp.120-145.

Table 1. Descriptive Statistics

Variable	Mean	St. Dev	Minimum	Maximum
Voter-level variables:				
Dummy for turnout	0.872	0.334	0	1
Dummy for SC voter	0.147	0.354	0	1
Dummy for other Hindu voter	0.244	0.430	0	1
Dummy for OBC voter	0.326	0.469	0	1
Constituency-level variables:				
Dummy for SC constituency	0.156	0.362	0	1
Population share of rural residents	0.772	0.161	0	0.995
Population share of SCs	0.166	0.066	0.020	0.373
Literacy rate	0.433	0.136	0.184	0.851
Population share by industry:				
Cultivators	0.141	0.062	0.000	0.322
Agricultural laborers	0.085	0.056	0.000	0.546
Livestock	0.009	0.015	0.000	0.110
Mining & quarrying	0.002	0.005	0.000	0.065
Household industry	0.007	0.007	0.001	0.069
Manufacturing	0.024	0.022	0.002	0.122
Construction	0.007	0.004	0.001	0.027
Trade & commerce	0.024	0.012	0.007	0.097
Transport, storage, & communication	0.009	0.006	0.001	0.039
Other services	0.034	0.013	0.004	0.097

Notes: The number of observations is 19,138. This table reports the simple average (standard deviation) of 19,138 sample voters. Voter-level variables are compiled from the NES04 microdata while constituency-level variables are compiled from the 1991 Population Census data, except for the population share of SCs that are compiled from the 1971 Population Census..

Table 2. Political Reservation and Voter Turnout, 2004 Parliamentary Elections

Voter's category:	SC	Non-SC	Other Hindu	OBC
	(1)	(2)	(3)	(4)
SC constituency dummy	**3.601+**	**-0.919**	**-0.653**	**-1.358**
	[2.110]	**[1.358]**	**[2.120]**	**[1.796]**
Population share of SCs	0.873	0.425	0.957	-0.435
	[1.178]	[0.465]	[0.793]	[0.616]
Square of population share	-5.425	-3.775	-5.909	0.902
of SCs	[5.022]	[2.330]	[3.920]	[3.114]
Cube of population share	8.456	6.426*	8.867+	-0.061
of SCs	[6.629]	[3.152]	[5.094]	[4.306]
Number of observations	2,920	16,218	4,912	6,457
R-squared	0.030	0.022	0.025	0.036

Notes: The coefficients to identify the reservation impact are shown in bold fonts. The dependent variable is the dummy for turnout in the 2004 parliamentary elections. Robust standard errors clustered at the parliamentary constituency level are reported in brackets. **, * and + denote statistical significance at the 1%, 5%, and 10% levels respectively. Regressions include state fixed effects, the literacy rate, the population share of rural residents, and the population share of workers in each industrial category. Sample voters in ST constituencies are excluded from the analysis.

Table 3. Political Reservation and Voter Turnout, 2004 Parliamentary Elections (Difference-in-Difference: DID)

	(1)	(2)
SC constituency dummy	-0.825	-0.815
	[1.390]	[2.049]
SC voter dummy	-0.617	-0.672
	[0.893]	[1.101]
Other Hindu voter dummy		0.029
		[0.982]
OBC voter dummy		-0.149
		[0.900]
SC const. * SC voter dummy	**5.234****	**5.230***
	[2.009]	**[2.459]**
SC const. * other Hindu dummy		**0.112**
		[2.530]
SC const. * OBC voter dummy		**-0.124**
		[2.677]
Number of observations	19,138	19,138
R-squared	0.020	0.020

Notes: DID coefficients to identify the reservation impact are shown in bold fonts. The dependent variable is the dummy for turnout in the 2004 parliamentary elections. Robust standard errors clustered at the parliament constituency level are reported in brackets. **, * and + denote statistical significance at the 1%, 5%, and 10% levels respectively. Regressions include state fixed effects, the literacy rate, the population share of rural residents, and the population share of workers in each industrial category. Sample voters in ST constituencies are excluded from the analysis.

Table 4. Political Reservation in Assembly Elections and Voter Turnout in the 2004

	(1)	(2)
Dummy for a SC constituency in the	-5.763	-4.607
assembly election	[3.327]	[3.428]
Parliament constituency fixed effect	No	Yes
R-squared	0.004	0.213

Notes: The coefficients to identify the reservation impact are reported in this table. Regressions also include the population share of SCs (linear, quadratic, and cubic terms). The dependent variable is the dummy for turnout in the 2004 parliament election. Robust standard errors clustered at the state assembly constituency level are reported in brackets. **, *, and + denote statistical significance at the 1%, 5%, and 10% levels respectively. The population share of SCs at the state assembly constituency level was calculated from the NES04 microdata. Since the sample is restricted to voters in a general constituency in the national parliament election, the number of observations is 2,197.

Table 5. Political Reservation in Assembly Election and Voter Turnout in the 2004 Parliament Election (Difference-in-Difference: DID)

	(1)	(2)
SC const. in assembly elect. *SC voters	-6.267*	-7.209*
	[2.640]	[2.860]
Parliament constituency fixed effect	No	Yes
R-squared	0.002	0.076

Notes: DID coefficients to identify the reservation impact are reported in this table. Regressions also include the dummy for a SC constituency in the state assembly election, the dummy for a SC constituency in the parliament election, the dummy for a SC voter, and three cross terms of these three dummy variables. The dependent variable is the dummy for turnout in the 2004 parliament election. Robust standard errors clustered at the state assembly constituency level are reported in brackets. **, * and + denote statistical significance at the 1%, 5%, and 10% levels respectively. Since voters belonging to a ST parliament constituency and voters belonging to a ST assembly constituency inside a non-ST parliament constituency are excluded, the number of observations is 18,707.

Table 6. Political Reservation and Party Choice

	Voter's category:			
	SC	Non-SC	Other Hindu	OBC
Choosing the party (ref.=BJP)	(1)	(2)	(3)	(4)
INC if in SC constituency	-0.023	-0.008	-0.044	-0.176
	[0.344]	(0.195)	(0.333)	(0.239)
BSP if in SC constituency	-0.151	-0.611	-2.918**	-0.676
	(0.389)	(0.377)	(1.413)	(0.474)
Others if in SC constituency	-0.264	0.260	0.304	0.224
	(0.301)	(0.173)	(0.267)	(0.210)
Number of observations	1,553	7,739	2,617	3,121

Notes: The coefficients to identify the reservation impact are reported in this table. Regressions also include the population share of SCs (linear, quadratic, and cubic terms), state fixed effects, the literacy rate, the population share of rural residents and the population share of workers in each industrial category. The dependent variable is an indicator variable of party choice in the 2004 parliamentary elections and the estimated model is a multinomial logit. Robust standard errors clustered at the parliamentary constituency level are reported in brackets. **, * and + denote statistical significance at the 1%, 5%, and 10% levels respectively. The sample is restricted to voters in a constituency where INC, BJP, and BSP all fielded their candidates.

Table 7. Political Reservation and Party Choice

(Difference-in-Difference: DID)

	(1) Comparison of SC vs. non-SC voters			(2) Comparison of SC, other Hindu, OBC and other voters		
	INC	BSP	Others	INC	BSP	Others
SC const. * SC voter	0.008	0.347	-0.168	0.141	0.770	-0.022
dummy	[0.296]	[0.393]	[0.257]	[0.395]	[0.588]	[0.334]
SC const. * other				0.362	-0.849	0.222
Hindu dummy				[0.376]	[1.136]	[0.356]
SC const. * OBC				0.056	0.816	0.197
dummy				[0.306]	[0.622]	[0.273]

Notes: DID coefficients to identify the reservation impact are reported in this table. Regressions also include the dummy for a SC parliament constituency, the dummy for a SC voter, the dummy for other Hindu voter (spec. (2) only), the dummy for OBC voter (spec. (2) only), state fixed effects, the literacy rate, the population share of rural residents, and the population share of workers in each industrial category. The dependent variable is an indicator variable of party choice in the 2004 parliamentary elections and the estimated model is a multinomial logit (the choice of BJP as the reference). Robust standard errors clustered at the parliamentary constituency level are reported in brackets. **, * and + denote statistical significance at the 1%, 5%, and 10% levels respectively. The sample is restricted to voters in a constituency where the INC, BJP, and BSP all fielded their candidates. The number of observations (NOB) is thus 9,292.

Appendix 1. Reporting Bias and Constituency Characteristics

Hausman et al. (1998) examine the effect of misclassification of the binary dependent variable on statistical inference using discrete-response models. In our context, if the turnout response is subject to over-reporting at the rate of α and the misclassification probability is independent of explanatory variables, then the slope coefficients in the linear probability model have bias, which is proportional to 1-α. However, both of our the population control approach and DID tests are focused on testing the equality of one and another of the slope coefficients. These tests are unbiased if α is independent of all explanatory variables. Therefore, in order to examine whether α is independent, we run a constituency-level regression model where the extent of over-reporting is regressed on explanatory variables used in our population control approach and DID regression models.

The results are shown in the Appendix Table 1. They firmly demonstrate that the magnitude of bias is the same irrespective of the characteristics of a constituency. Therefore, the use of NES04 microdata to investigate the causal impact of reservation on voting behavior is justified.

Appendix Table 1. Reporting Bias and Constituency Characteristics

	Actual Voter Turnout – NES04 Voter Turnout
Population share of SCs (%)	-0.156
	[0.128]
Population share of STs (%)	0.033
	[0.073]
Dummy for a SC constituency	0.543
	[1.418]
Dummy for a ST constituency	-0.750
	[2.711]
State fixed effect	Yes
Number of observations	393
R-squared	0.35

Notes. Standard errors are reported in brackets. The information on actual voter turnout rates was taken from the Election Commission of India's website [http://eci.nic.in/eci_main/index.asp, accessed on April 10, 2011]. The NES04 voter turnout rates were calculated using NES04 microdata. The regression model also includes the literacy rate, the population share of rural residents, and the population share of workers in each industrial category. None of the

coefficients on the explanatory variables are statistically significant.

Appendix 2. Robustness Check

Appendix Table 2. Political Reservation and Voter Turnout, 2004 Parliamentary Elections (using the 1991 SC population share)

Voter's category:	SC	Non-SC	Other Hindu	OBC
	(1)	(2)	(3)	(4)
SC constituency dummy	**4.524+**	**-0.741**	**-0.836**	**-0.906**
	[2.304]	**[1.361]**	**[2.156]**	**[1.821]**
Population share of SCs	2.508	-0.003	0.337	-0.952
	[1.904]	[0.793]	[1.304]	[1.184]
Square of population share	-14.335	-0.495	-0.621	3.538
of SCs	[10.016]	[4.604]	[7.697]	[7.118]
Cube of population share	22.128	-0.362	-1.723	-5.441
of SCs	[16.023]	[7.780]	[13.800]	[12.890]
Number of observations	2,920	16,218	4,912	6,457
R-squared	0.03	0.02	0.02	0.04

Notes: The coefficients to identify the reservation impact are shown in bold fonts. The dependent variable is the dummy for turnout in the 2004 parliamentary elections. The population share of SCs is calculated from the 1991 Population Census. Robust standard errors clustered at the parliamentary constituency level are reported in brackets. **, * and + denote statistical significance at the 1%, 5%, and 10% levels respectively. Regressions include state fixed effects, the literacy rate, the population share of rural residents, and the population share of workers in each industrial category. Sample voters in ST constituencies are excluded from the analysis.

Appendix Table 3. Political Reservation and Party Choice, 2004 Parliamentary Elections (using the 1991 SC population share)

	Voter's category:			
	SC	Non-SC	Other Hindu	OBC
Choosing the party (ref.=BJP)	(1)	(2)	(3)	(4)
INC if in SC constituency	0.128	-0.037	-0.089	-0.187
	[0.310]	[0.181]	[0.320]	[0.226]
BSP if in SC constituency	-0.061	-0.657*	-2.483*	-0.735
	[0.374]	[0.372]	[1.351]	[0.488]
Others if in SC constituency	-0.100	0.222	-2.483*	0.195
	[0.278]	[0.166]	[1.351]	[0.200]
Number of observations	1,553	7,739	2,617	3,121

Notes: The coefficients to identify the reservation impact are reported in this table. Regressions also include the population share of SCs (linear, quadratic, and cubic terms) calculated from the 1991 Population Census, state fixed effects, the literacy rate, the population share of rural residents and the population share of workers in each industrial category. The dependent variable is an indicator variable of party choice in the 2004 parliamentary elections and the estimated model is a multinomial logit. Robust standard errors clustered at the parliamentary constituency level are reported in brackets. **, * and + denote statistical significance at the 1%, 5%, and 10% levels respectively. The sample is restricted to voters in a constituency where INC, BJP, and BSP all fielded their candidates.