

INCUMBENCY EFFECT IN THE INDIAN PARLIAMENTARY ELECTIONS, 2004 AND 2009: A REGRESSION DISCONTINUITY APPROACH*

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Abstract

The paper examines the effect of incumbency status of a contestant on the chances of winning and the margin of victory in the Indian parliamentary elections 2004 and 2009, a topic of keen interest not only to political parties but also to the electorate. The study uses a non-parametric approach namely, Regression Discontinuity (RD) design which is considered to be a better methodology when data on covariates of the election outcomes are inadequate. The empirical results based on RD design suggest that the incumbency factor adversely affected the likelihood of winning the election by 26% in 2004 and 10% in 2009. The incumbents' margin of victory was also 5% and 7% lower than that of non-incumbents in the last two elections in India.

Keywords: incumbency disadvantage; Indian parliamentary elections; regression discontinuity design

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1. Introduction

What determines the chances that a candidate contesting elections will win? A frequently cited reason and one that is considered to be the most important is the incumbency status of the

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candidate. The incumbency advantage refers to the effect of being in office -a member of parliament (MP) in an electoral constituency (district) - on the chances of winning the subsequent election. There is ample evidence that in many western mature democracies, incumbent contestants have an advantage over their rivals, the non-incumbents, in getting re-elected. A large volume of studies has examined the incumbency advantage in the US House of Representatives elections. Levitt and Wolfram (1997) indicate that 90% of incumbents seeking re-election to the US House of Representatives have been successful. Gelman and King (1990) observe a positive incumbency advantage in the US Congressional elections for most of the years since 1900 and the effect was found to be much larger in the latter half of the twentieth century than it was in the past. Lee (2008) finds the incumbency advantage of the order of 40-45%. Uppal (2010) reports that incumbents are 30% more likely to win an election in the US state legislatures and gain 5.3% more votes. Heinmueller and Kern (2008) shows that incumbency leads to a gain of 1.4-1.7% points in proportional representation vote share in Germany's mixed electoral system. Lemennicier and Katir-Lescieux (2010) reports a significant positive incumbency effect in French National Assembly elections and their results show that a 10% increase in the margin of votes in 2002 raised the probability of winning in 2007 by 8.9%. Burtler (2009) also presents evidence that non-freshman incumbents enjoyed 2-3% advantage over freshman who won in the US House of Representative elections 1946-2004.

The reasons for the incumbency advantage are several: using one's office to grant favours to the constituency or individuals belonging to the constituency, franking privileges, increasing their visibility among the general public, gaining media exposure, and generating additional financial resources to carry out election campaign.

India is the largest democracy in the world. Yet few researchers have studied the incumbency effect in the Indian parliamentary (Lok Sabha) elections even though 'anti-incumbency' is an issue much debated in every parliamentary election since 1991.⁴ In an earlier unpublished paper, Linden (2004) examined the incumbent advantage in the Indian parliamentary elections from 1951-1999 using Regression Discontinuity (RD) design and found that incumbents had about 37% advantage over non-incumbents in the elections held before 1991. This trend was reversed post 1991 when incumbents suffered a 14% disadvantage in comparison with their counterparts. This change is attributed to the decline in the dominance of the Congress party, coalition or multi-party rule and increasing awareness among the electorate. Borooah (2006) examined the extent of anti-incumbency towards the Indian National Congress (INC), a major political party in India, using "risk ratio" and "odds ratio" in ten parliamentary elections held during 1967-1999. The study shows that there is little evidence of incumbency bias against the INC. Uppal (2009) studied the incumbency effect in state Legislative Assembly elections in India from 1975 to 2003 and found an incumbency disadvantage of 9% in the post 1991 elections. Recently, Ait, Golden and Tiwari (2011) show that electoral disadvantage to incumbents in the 2009 parliamentary election stems from the superior electoral performance of allegedly criminal candidates who tend to drive out parliamentary incumbents from office.

⁴ There is an extensive literature examining the outcome of the Indian parliamentary election using the National Election Survey 2004. See Yadav (2004) and other articles published in the special issue of the Economic and Political Weekly, 39(51) 2004. However there is a paucity of rigorous work using quantitative techniques on the incumbency effect.

The present study differs from the previous work by Linden (2004) and other Indian studies in the following ways: First, we estimate the incumbency effect in the last two parliamentary elections - 2004 and 2009 – which are not undertaken in the earlier studies. Second, the Indian political scenario has witnessed notable developments since the 1999 elections with single party rule becoming virtually non-existent and making way for multi-party coalition rule at the national level. Hence it is more relevant and appropriate to study the recent elections than the earlier ones. Third, the errors in identifying the incumbents due to numerous formats used to record the names of the contestants across the Indian States over a period of time affects the incumbency effects. We use a better method to identify the incumbents. The bias due to mismatch of names of the electoral contestants is hence likely to be negligible thereby leading to more accurate estimates of the incumbency effect. Lastly, Linden (2004) estimated the incumbency effect only on the probability of winning but we analyse two election outcome variables namely probability of winning and vote share in the following election.

This study, using RD design, finds that incumbents in India are in a disadvantaged position and the anti-incumbency effect is higher in the 2004 than in the 2009 parliamentary elections. We are not aware of any published work analysing the incumbency effect in the recent Indian parliamentary elections. In this sense this paper makes a significant contribution to a theme that is of great interest not only to politicians but also to academicians and the public at large.

The rest of the paper is organized as follows. The following section 2 discusses briefly the Indian political system and the incumbency advantage. This is intended for readers who are not familiar with the Indian democratic system. Section 3 deals with the model and estimation issues. Section 4 describes the data source and the procedure followed to construct the data set for the analysis. Section 5 presents the estimates of the incumbency effect and section 6 reports the findings and conclusions from the study and points to issues for further analysis.

2. The Indian Political System and Incumbency Disadvantage

India is a federal union of 28 States and 7 Union Territories. The legislature of the federal government consists of two houses – the Lower house called “Lok Sabha” and the Upper house called the “Rajya Sabha”. The upper house consists of 235 members all of whom except 12 are elected by the representatives of the State Assemblies. The remaining 12 members are nominated by the President of India based on their achievements in arts, science, culture etc.,. The lower house of the parliament consists of 545 members. Of these, 543 are elected members and 2 nominated by the President of India from the Anglo-Indian Community if the President thinks that the community is not adequately represented in the parliament. The members of the parliament are elected from all parts of India for a 5-year term. Each member represents about one million electorates depending upon the electoral district called “Constituency”. The lower house of the parliament is more powerful as it passes the financial bills and takes decisions on matters of grave importance.

India is a parliamentary democracy and follows the single tier majoritarian system with first-past-the-post election. That is, a national level one round election will decide the representatives of the parliament and the candidate who receives the highest votes will be winner. In India, there are large number of recognized and unrecognized political parties and

many of them are caste or religious outfits and a large number of independent (non-affiliated to any political party) contestants due to low cost of entry into election.

The Election Commission of India, which is a constitutionally empowered organization in the country, conducts the elections regularly. The parliamentary elections have been held regularly since 1951, except for three years 1977-79, when a state of emergency was declared in the country. So far 14 general elections have been held for the parliament (Lok Sabha).

We have confined the analysis to the last two parliament elections 2004 and 2009 for the following reasons: (i) The Indian political system has witnessed a tremendous change in the recent years. The Indian National Congress (INC) party which ruled the country for 42 years during the period 1951-96 (except a three year period 1977-80 when it was ruled by the Janata party) lost its dominance and multi-party coalition governments with large scale participation of the regional parties emerged in the national political scenario. (ii) The 11th and 12th general elections to the parliament were held in 1996 and 1998 before completion of full term of 5 years because the ruling party lost majority due to disagreement among coalition partners. The 1999 election was held within a period of 2 years after the earlier elections and the electoral results were marginally advantageous to NDA and are more or less similar to earlier election results in terms of party and candidate representations. The electorates faced what political scientist call an "election fatigue" (iii) the period was marked by party splits and emergence of large number of small parties with a few elected members and (iv) increasingly caste and religion have come to play an important role. Defections from political parties too have become common. As the political competition and party structure changes from one election to another, the voter behavior in terms of choice of candidate and political party is also likely to change.

The 1999 parliament election was a contest between two coalition fronts rather than between two or three parties. The BJP led front named as "National Democratic Alliance (NDA)" consisted of 18 alliance parties. The coalition type contest continued in 2004 and 2009 elections. The Congress led coalition consisted of 10 parties in 1999 and this continued in the 2004 and 2009 elections but for small changes in the constituent parties. After 2004, the congress party led coalition was named as "United Progressive Alliance" and it was UPA-I and UPA-II for the 2004 and 2009 terms.

The evidence from the Western democracies points to the fact that the incumbents have greater chances of winning than the non-incumbents and the incumbency advantage has been increasing over the years. In India too, the incumbents of the ruling party had a disproportionate advantage over the non-incumbents by being able to influence the government to locate major projects in their constituency. Money power and dynasty also play key roles in the Indian elections.

In the recent years, a recurring theme that has been discussed in mass media, election analysts and the voters just before the election is the 'anti-incumbency' wave or sentiment against the ruling party. The evidence from most of the studies, with the exception of Barooah (2006), also supports this view. What could have caused the anti-incumbency wave, mostly against the ruling party? This could be the expression of voters' anger or dissatisfaction with the sitting Member of Parliament (MP) or ruling party at the centre or state. When a ruling party fails to address the social or political problems or if there is large scale corruption in administration, it turns out that the voters prefer an alternative candidate or party than the incumbent party or MP.

However, the present study does not examine the causes for the incumbency advantage or disadvantage, rather the focus is on the incumbency effect on the election outcome.

3. Incumbency Effect: Model and Estimation Issues

The incumbency effect is measured using non-parametric approach using Regression Discontinuity (RD) design which is more appropriate for studying incumbency effect in situations where information about the covariates of the chances of winning and margin of victory are inadequate. Moreover, this method also permits causal inferences to be made based on a weaker set of assumptions than the conventional regression method and it is free from functional form and bias due to endogeneity and omitted variables.

Consider the following model

$$W_{it+1} = \alpha + \beta I_{it+1} + f(y, V_{it}) + h(\delta, Z_{it}) + u_{it}, i = 1, 2, \dots, n \text{ candidates}, \quad \dots (1)$$

$$t = 1999, 2004 \text{ \& } 2009 \text{ years}$$

$$I_{it+1} = \begin{cases} 1 & \text{if } V_{it} > 0 \text{ and} \\ 0 & \text{if } V_{it} < 0 \end{cases} \quad \dots (2)$$

where W_{it+1} are two election outcome variables namely victory status and margin of victory in election $t+1$, I_{it+1} is the incumbency status which takes the value of 1 if the individual is an incumbent in the $t+1$ period and 0 otherwise, f is some function that relates the margin of victory (V_{it}) of the i^{th} candidate in the election period ' t ' to the election outcome in $t+1$, and h is some function which relates, a vector of measurable and unmeasurable characteristics of the candidate as well as the affiliated political party⁵ to the outcome of the election in $t+1$. α , β and γ are scalar parameters and δ is a vector of the parameters to be estimated and u_i is the random disturbance term.

The dependant variable, victory status, is a dichotomous variable equal to 1 if the candidate won in election $t+1$ and 0 if the candidate lost. In India, more than two candidates contest from a constituency. In this case, the margin of victory for a winner is measured as the difference between the vote share of the winner and the runner-up, which is positive. For the loser, it is the difference between his/her vote share and the vote share of the winner, which is negative.⁶ The margin of victory (V) is a better measure than the vote share in the single member

⁵ The covariates that may be considered are the candidate's age, education, sex, caste, religion, wealth, criminality, political experience, popularity, charisma, party affiliation and its popularity, reputation, whether ruling party or opposition etc.

⁶ If there is only one contestant from a constituency, then no election is held for that constituency and the candidate is declared an unopposed winner. There were no unopposed winners in any of the 543 constituencies in the past three elections. The margin of victory of the 2nd runner-up is also computed in the same manner. That is, difference in the vote share of the winner and the 2nd runner-up which is negative. Occasionally an incumbent vacates his/her seat in favour of one of his family members. However, the family member of an incumbent and the past incumbents are not treated as incumbents. That is, the incumbent in 1999 who did not contest in the 2004 election but contested in the 2009 election is not presently an incumbent. However, incumbents who have changed their constituency within the State are treated as incumbents. The justification is that the members of parliament are not only known in their constituency but also in the entire State. Only a few top leaders of national level

first-past-the-post election systems such as in India. Hence, the margin of victory in the election in $t+1$ is also used to study the incumbent advantage in the Indian parliamentary elections. Equation (2) indicates that a candidate wins if $V > 0$ and becomes an incumbent and loses the election if $V < 0$.⁷

The conventional parametric approach is not adopted in estimating equation (1) due to inadequate information on the covariates Z . Such an approach has the following limitations and would yield biased and inefficient estimates: (i) Incumbency is an endogenous variable and one has to use an instrumental variable approach, which requires information on the identifying factors. Unfortunately, we are unable to find a variable that influences only the incumbency status but not the election outcome variables. (ii) For the 2004 and 2009 elections, information on some characteristics of the candidates such as age, gender, education, wealth, criminal charges, and political affiliation are available from the affidavits filed by the candidates. However, the vector ' Z ' includes not only the observed variables mentioned above, but also several unobserved and unmeasurable factors such as popularity, charisma, reputation, political experience, illegal cash or in-kind transfers, money power etc., which may be treated as random variable across all candidates and captured by the stochastic disturbance term ' u ' of equation (2). The estimates from the two methods are not comparable and hence the conventional parametric approach is not attempted and the preferred RD approach is employed in this study.

3.1 Regression Discontinuity (RD) Design

Lee (2008), in a seminal work, applied the RD design to estimate the incumbency effect in the US Congressional elections. This technique has since been extensively used in other studies (Linden, 2004; Pettersson-Lidbom, 2008; McCrary 2008, Hainmueller and Kern 2008, Uppal, 2009, 2010) and Lee and Lemieux (2010) provide an excellent review.⁸

The RD design exploits the inherent randomness in the election outcome to identify the causal effect of incumbency. Lee (2008) shows that the RD estimates are as creditable as estimates from random experiments if the outcome of an election is partially determined by random or chance factor. It is based on the assumption that close to the margin of victory at zero the chances of winning or losing is determined by some random factor which may be bad weather or some unmeasurable or unobservable random factors. The RD design compares incumbents and non-incumbents in elections in which the margin of victory is close to the threshold level⁹ where the effect of the characteristics of bare winners and bare losers of an election are likely to

political parties change their constituency from one state to another state and they are treated as incumbents.

⁷ $V=0$ implies that the vote share of top two candidates is the same. In such circumstances the winner is decided by a random draw or a re-election may be held. We are not aware of any such situation in the Indian parliamentary elections in the said period.

⁸ In a pioneering work, Thistlethwaite and Campbell (1960) first introduced the approach to study the effect of scholarships on career aspirations. However, economists recognized RD as a tool of analysis after the pioneering work of Hahn, Todd and van der Klaauw (2001) on identification and estimation issues. Also see the studies in the special issue on RD design in the Journal of Econometrics edited by Imbens and Lemieux (2008). Lee and Lemieux (2010) provide a comprehensive review of theoretical and empirical studies based RD design.

⁹ Margin of victory at zero and threshold level or value are used interchangeably.

be similar. The difference in the electoral success of these two groups is attributed as the causal effect of incumbency.

Let $W_{it+1}^*|I_{it} = 1$ be the election outcome if the individual is an incumbent and $W_{it+1}^*|I_{it} = 0$ be the election outcome if the individual is a non-incumbent. Then, the incumbency effect on the election outcome is measured as

$$E(W_{it+1}^*|I_{it} = 1) - E(W_{it+1}^*|I_{it} = 0) = \beta \quad \dots (3)$$

For any individual, $W_{it+1}^*|I_{it} = 1$ and $W_{it+1}^*|I_{it} = 0$ cannot be observed simultaneously. Let the unobserved election outcome (W^*) be a function of the observed election outcome (W) and a random component ϵ .

$$W_{it+1}^* = W_{it+1} + \epsilon_{it+1} \quad \dots (4)$$

Assuming that the random component, one of the covariates in the determinants of the outcome of elections, has a continuous density function, the incumbency status can be randomized and its effect (β) can be estimated (Lee, 2008). In a closely contested election, in the neighbourhood of margin of victory at 0, the election outcome is determined by random factors and the differences in the characteristics of the contestants may not have any influence on the outcome of the election. As shown in Hahn, Todd, and Klaauw (2001) and Imbens and Lemieux (2008), Lee (2008) and others, in the neighbourhood of margin of victory at 0, on the right and left hand sides of the threshold value, the incumbency effect (β) can be estimated without bias. Using (4) equation 3 can be written as

$$E(W_{it+1}|I_{it} = 1) - E(W_{it+1}|I_{it} = 0) = \beta + E(\epsilon_{it+1}|I_{it} = 1) - E(\epsilon_{it+1}|I_{it} = 0) \quad \dots (5)$$

The above equation can be written using the margin of victory (V) as

$$E(W_{it+1}|V_{it} > 0) - E(W_{it+1}|V_{it} < 0) = \beta + E(\epsilon_{it+1}|V_{it} > 0) - E(\epsilon_{it+1}|V_{it} < 0) \quad \dots (6)$$

In the neighbourhood of the margin of victory at 0, defined as $|\mu|$, the candidates (bare winners and losers) are expected to be similar. The RD design exploits this and compares the candidates who are slightly ($+\mu$) above (bare winners) and slightly below the ($-\mu$) (bare losers) margin of victory at 0.

Thus

$$E(W_{it+1}|0 < V_{it} \leq \mu) - E(W_{it+1}|-\mu \leq V_{it} < 0) = \beta + E(\epsilon_{it+1}|0 < V_{it} \leq \mu) - E(\epsilon_{it+1}|-\mu \leq V_{it} < 0) \quad \dots (7)$$

As μ tends to zero, that is close to the margin of victory at 0, β gives a true effect of incumbency, That is,

$$\lim_{\mu \rightarrow 0} E[W_{it+1} | 0 < V_{it} \leq \mu] - \lim_{\mu \rightarrow 0} E[W_{it+1} | -\mu \leq V_{it} < 0] = \beta \quad \dots (8)$$

Thus the RD design requires that (i) there is no discontinuity in the outcome variable other than at the margin of victory at 0 on the x-axis (as shown in Figures 1 and 2) and (ii) the observed characteristics is a continuous function of the margin of victory in the election at time 't'. Both the conditions can be verified with the data. We also make a weak assumption that unobserved characteristics are not systematically related with the election outcome.

3.2. Estimation of Incumbency Effect

The estimation of incumbency effect is a standard non-parametric estimation problem. As suggested by Imbens and Lemieux (2008), we use graphical analysis, a scatter plot with

smoothed lines based on local linear regressions estimated separately on the two sides of the margin of victory at 0.¹⁰ We apply the local linear regression procedure using triangle kernel and construct the graphs using STATA.¹¹ The estimates are obtained at the optimum or preferred bandwidth along with two other bandwidths – twice and half the preferred bandwidth.¹²

4. Data Base

The data for the study are from the Statistical Report on General Elections of Lok Sabha (Lower House of the Indian parliament) for the years 1999 and 2004 published in three volumes by the Election Commission of India (ECI, 2003) and the data on 2009 election results posted in the ECI website (<http://www.eci.gov.in>). The study uses the data from all the 543 constituencies for the three periods. The ECI publications provide constituency-wise information on the number of contestants, total number of electorates, number of electorates who voted and whether the constituency is reserved for Scheduled Castes (SC) or Scheduled Tribes (ST). For each contestant, the name of the candidate, party affiliation, and votes obtained are also reported. The age and gender of the candidates are available only for the 2004 and 2009 elections and not for the earlier elections.¹³ In India, the administrative boundaries of district are different from the electoral constituencies.

Although the ECI has been making sincere efforts to update the electoral list ahead of every parliament election, there are complaints of missing names of genuine voters and inclusion of bogus voters. To overcome such problems, the ECI has introduced voter identity cards with photograph. However, if there are incidents of poll rigging, the ECI orders re-polling in those centres thus ensuring that voters exercise their franchise in a free and fair manner. We have no information on the extent to which these incidents affect the election outcomes. We presume that the missing or fictitious voters and poll rigging incidents are rare and will not seriously affect the margin of victory.

¹⁰ An alternative to the local linear regression is the series regression method obtained by adding higher-order terms to the regression function. Lee et al. (2004) included fourth-order polynomials in the covariate to the regression function. The properties of such methods are as attractive as those of kernel type methods (Imbens and Lemieux, 2008). Hainmueller and Kern (2008) and Uppal (2009) applied third order polynomial regression to identify the incumbency effect

¹¹ We have used STATA to apply the RD design and construct the graphs. First, the average probability of winning or margin of vote in the year $t+1$ at 0.5 or 1% class intervals of the margin of victory in the year 't' is computed. The computed values are shown as scatter plots (see figures 1 and 2). Next using the local linear regression, smoothed lines on the two sides of the margin of victory in year 't' are fitted separately as shown in figures 1 and 2. This can be executed in STATA using the `lpoly` command in version 10 or later. The standard errors of the incumbency effects are computed by bootstrapping the local linear regression, which is a standard procedure. Using `graph` command, the smoothed lines of local linear regression are plotted. Interested readers may refer to the practical guide for RD design by Imbens and Lemieux (2008) and McGrary (2008).

¹² In non-parametric estimation, kernel regression is used to estimate the conditional expectation of a random variable and bandwidth is the interval used for local linear regression. STATA contains a built-in option to choose triangular or rectangle kernel and option to choose the optimum bandwidth.

¹³ Very few by-elections have been held at that time due to death or resignation of an elected member of the parliament. As this information is not readily available from the ECI publications, we are unable to consider those candidates who are elected in between the two elections.

Another issue pertaining to the data set, as indicated by the previous researchers for India and also for US, is matching the names of the contestants across the elections in order to identify the incumbents and track their performance in the next election (Butler, Lahiri and Roy, 1995; Gelman and King, 1990; Linden, 2004; Uppal, 2009). There is an apparent inconsistency in the recording of the candidates' names. The following discrepancies were observed: (i) full name expanding first, middle and last names (ii) last name with initials for first and middle names (iii) leaving out the last name or first name (iv) reporting the initials before or after the last name or first name and (v) differences in spelling the names arising from expressing original local Indian names in English. On account of these discrepancies, matching the names automatically using computer programming resulted in a number of mismatches that are bound to affect the finding of the study. In order to match the names as accurately as possible, the following method has been used. For each constituency, all the contestants of the two successive elections (1999 and 2004, 2004 and 2009) were pooled and sorted out by party affiliation. Then the names were compared manually for the first, middle and last names or last names and initials for the first/middle name with the expanded first/middle names.¹⁴ Some contestants had changed their constituency and contested from another constituency in the same state. Such candidates are mostly leaders of political parties or candidates having a long political career. These candidates were matched at state level.

The descriptive statistics pertaining to important features of the 1999-2009 parliament elections are given in table 1. There are 543 constituencies, of which, 79 and 41 constituencies were reserved for contestants from the SC and ST communities respectively.¹⁵ The number of voters increased by 7-8% over the two consecutive elections, that is, from 620 million in 1999 to 671 million in 2004 and to 714 million in 2009. Only 58-60% of the electorate voted in the last three elections. There were 4648 contestants in the 1999 election, which increased to 5435 (17%) in 2004 and to 8071 (33%) in 2009. Women contestants constituted only 6-7% of all contestants in the study period. Currently there are 6 national level recognized parties namely Indian National Congress (INC), Bharatiya Janata Party (BJP), Communist Party of India (CPI), Communist Party of India (Marxist) (CPM) and Bahujan Samaj Party (BSP) and 47 state level recognized parties and 1563 unrecognized parties.¹⁶

¹⁴ In India, most of the candidates stick to the party to which they are affiliated and only a few move from one party to another party or contest as an independent candidate.

¹⁵ In the reserved constituencies only eligible persons belonging to the particular reserved community (SC or ST) can contest. In contrast, in a general constituency any eligible person, including SC and ST, is allowed to contest.

¹⁶ A political party is treated as a recognized party in a State, if it satisfies either of the two conditions: (i) it has engaged in political activity for a continuous period of five years and returned at least one member to the House of the People for every twenty-five members of that House from that State or at least one member to the Legislative Assembly of that State for every thirty members of that Assembly, or (ii) the votes polled to the party candidates is not less than six per cent of the total number of valid votes polled by all the contesting candidates at parliament or Legislative Assembly election in the State. If a political party is treated as a recognized political party in four or more States, it shall be known as a 'National Party' throughout India but only so long as that political party continues to fulfil thereafter the conditions for recognition in four or more States. The Janata Dal (United) and Janata Dal (Secular) were recognized national parties in 1999 but not in 2004 and Nationalist Congress Party (NCP) has become a recognized national party in 2004.

Table 1. General Information About 1999 and 2004 Indian Parliament Elections

Category	1999 Lok Sabha Election	2004 Lok Sabha Election	2009 Lok Sabha Election
Constituency (Electoral districts)	543	543	543
General	423	423	423
Reserved for SC	79	79	79
Reserved for ST	41	41	41
Total Electors (in millions)	620	671	714
Electors Voted (%)	60.0	58.1	58.2
Contestants			
All	4648	5435	8071
Women	284	355	557
Women won	49	45	59
Political Parties			
National	7	6	7
Regional	40	51	>51
Registered (unrecognized) parties	122	173	>173

Source: For 1999 and 2004, Statistical Report on General Elections, 1999 and 2004, Vol. 1, Election Commission of India, New Delhi & for 2009, information given in the ECI website: <http://www.eci.gov.in>.

Table 2 displays the performance of the incumbents in the 2004 and 2009 elections. The number of incumbents re-running and winning is very high in the US Congress elections. However, in India, the number of incumbents re-running the election declined from 68% in 2004 to 56% in 2009. The probability of winning was 0.35 in 2004 and it declined to 0.26 in 2009. The probability of winning conditional on re-running also declined from 0.52 to 0.47. This is perhaps due to the anti-incumbency sentiment that prevailed in India.

The performance of the women incumbents in the last two elections is also given in table 2. The probability of women incumbents getting re-elected seems to be higher, that is, 65% in 2004 and 52% in 2009 compared to all incumbents 35% and 26% respectively for the two elections.

Table 2. Incumbents in Indian Parliament Elections: 2004 and 2009

<i>Description</i>	<i>2004</i>	<i>2009</i>
Total Incumbents	543	543
# of incumbents rerun	368	305
Probability of rerunning election	0.68	0.56
# of incumbents won	191	142
Probability of re-electing	0.35	0.26
Probability of winning conditional on rerunning	0.52	0.47
Women		
# of women incumbents	46	44
# of women incumbents rerun	30	23
Probability of rerunning	0.65	0.52
# of women Incumbents won	13	13
Probability of re-electing	0.65	0.52
Probability of winning conditional on rerunning	0.43	0.57

Source: Authors calculation.

We have examined the success rate of past incumbents (incumbents who did not contest in 2004 but contested in 2009). Out of 176 incumbents of 1999 who did not contest in 2004, only 17 returned and contested in 2009 parliament elections and 6 of them won the election which implies that the success rate is only 35% which is slightly higher success rate than the current incumbents in 2009 elections. The number of incumbents who switched their constituency is only 4 in 2004 and two of them won the election.¹⁷

Next we examine the margin of votes of the winners in the 1999, 2004 and 2009 elections (Table 3). In India, a large number of candidates win with a narrow margin of victory. As observed from the table, in about one-half to two-thirds of the constituencies in all the three elections, the margin of victory is less than or equal to 10% and the median values of the margin of victory are 8%, 10% and 7% respectively for 1999, 2004 and 2009. Thus understanding the impact of incumbency in marginal constituencies is vital as it determines who controls the India parliament.

Table 3. Margin of Victory in 1999, 2004 and 2009 Indian Parliament Elections

<i>Vote Margin (%)</i>	<i>1999 Election</i>		<i>2004 Election</i>		<i>2009 Election</i>	
	<i>Number</i>	<i>%</i>	<i>Number</i>	<i>%</i>	<i>Number</i>	<i>%</i>
<i>Range</i>						
0 - 2.5	101	18.6	77	14.2	95	17.5
2.5 – 5.0	89	16.4	75	13.8	103	19.0
5.0 - 10.0	133	24.5	123	22.7	145	26.7
10.0 - 25.0	183	33.7	207	38.1	164	30.2
Above 25.0	37	6.8	61	11.2	36	6.6
Average (%)	10.19		10.26		9.71	
Minimum (%)	0.02		0.06		0.04	
Maximum (%)	53.55		61.4		70.1	
Median (%)	7.87		9.94		6.96	
# of Constituency	543		543		543	

Source: Computed from the Election Commission data.

The outcome of another 30-38% of constituencies, are determined by a margin in the range of 10-25% A bigger margin of victory of above 25% is observed for a meagre 7-11% of constituencies over the three elections. Thus the narrow margin of victory in a majority of constituencies provides ample scope for applying the RD design to estimate the incumbency effect.

5. Estimating Incumbency Effect Based on Regression Discontinuity (RD) Design

The incumbency effect may vary from one election to another depending upon the perception of the voters about their representatives and hence it is estimated separately for 2004 and 2009. Further, the boundaries of the constituencies have changed due to the reorganization of the constituencies in 2008 and hence we cannot pool the 2004 and 2009 data for estimating

¹⁷ Based on the recommendations of the 'Delimitation Committee' the boundaries of some of the constituencies have been redrawn in 2008. The names of 120 constituencies have been changed based on new boundaries and hence it is difficult to find how many incumbents changed their constituency in 2009.

the incumbency effect. The changing of boundaries of constituencies is not expected to affect the incumbency effect to be estimated.¹⁸

5.1. Tests on Basic Assumptions of RD Design

The RD design approach requires that the election outcome variables – victory status or margin of victory in election $t+1$ - must be a continuous function of the assignment variable, namely, the margin of victory in 't' throughout the range except at the threshold level. As we observe from Figures 1-4, the margin of victory in 1999 and 2004 is a continuous function of the two outcome variables on both sides of the threshold level and the jump at the threshold level is clearly visible. It can be noted from the figures that there is no discontinuity in outcome variables in any other level of the margin of victory. Next we checked whether there are significant differences between the winners and losers in characteristics such as age, sex, number of contestants, voter turnout and reserved (SC/ST) constituency, education, number of criminal charges and net assets, other than incumbency status (results are given in Appendix tables A1 and A2).¹⁹ There is large number of missing values in the data on education, criminal charges and asset for the year 2004 as many of the affidavits filed by the candidates was missing or not legible and hence these variables are included only for 2009. Only the difference between winners and losers in few variables such as age, sex, number of contestants and voter turnout are statistically significant at 5% or higher in all or less than 25% margin of victory. The mean difference in none of the variable is statistically significant when we move closer and closer (at 10% and 5%) to the margin of victory at zero which implies that the difference in characteristics are continuous functions of the margin of victory and supports the credibility of the RD estimates.

5.2. Incumbency Effects in 2004 and 2009

The incumbency effect in the Indian parliamentary elections based on the estimates of RD design is estimated and discussed in this section. The graphical analysis is an integral part of the RD analysis and helps to visualize the identification of the incumbency effect. The estimates and graphs are carried out using STATA. The graphical representation of the RD estimates of the incumbency effect, which is constructed as explained below, is displayed in figures 1 and 2 for 2004 and 2009 respectively. It is a plot of the relationship between the probability of winning the election in $(t+1)$ as a function of the margin of victory in election (t) for the years 2004 and 2009. The scatter plot is the average probability of winning over an interval of 1% margin of victory. The right of the vertical line at zero represents the margin of votes of the winners and the left of the line is the margin of votes of the losers. The solid curve is the local polynomial regression estimation. The incumbency effect is the size of the discontinuity, which is the difference in the predicted probability of the winners and losers evaluated at the margin of victory at zero.

¹⁸ The redistricting or delimitation as known in India has been taken up after a gap of three decades with a view to equalizing constituency size within a state. As stated in footnote 3, the incumbents are identified at State level and in some cases at national level.

¹⁹ It is mandatory for the candidates to file their election expenditure to the Election Commission of India. A large number of candidates do not file and also it is grossly underreported.

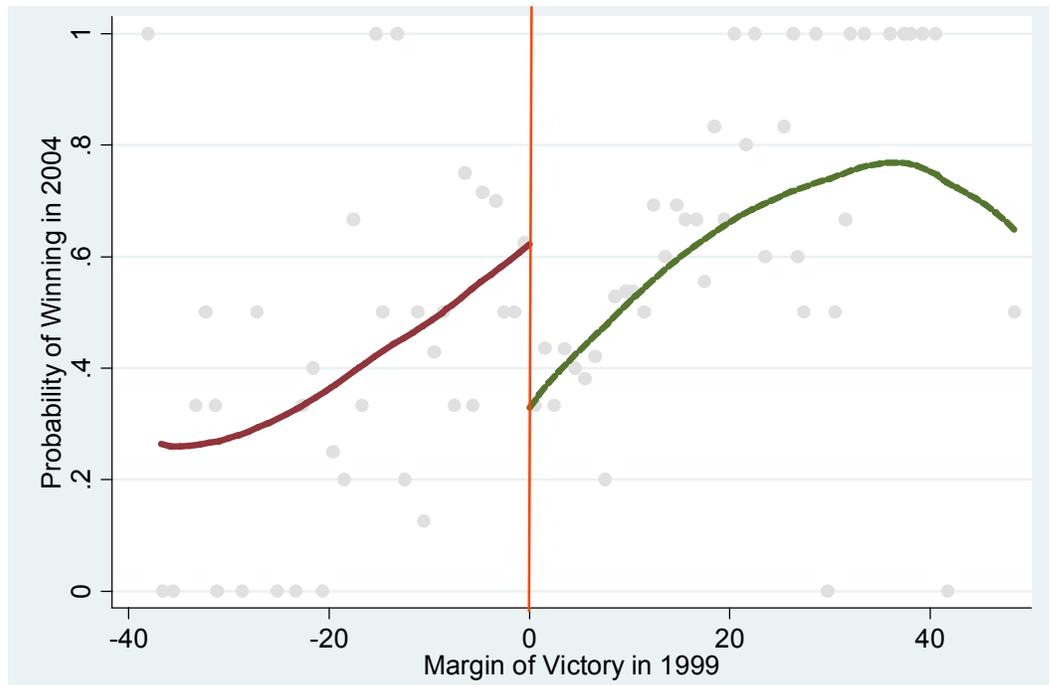


Figure 1. Probability of Winning in 2004

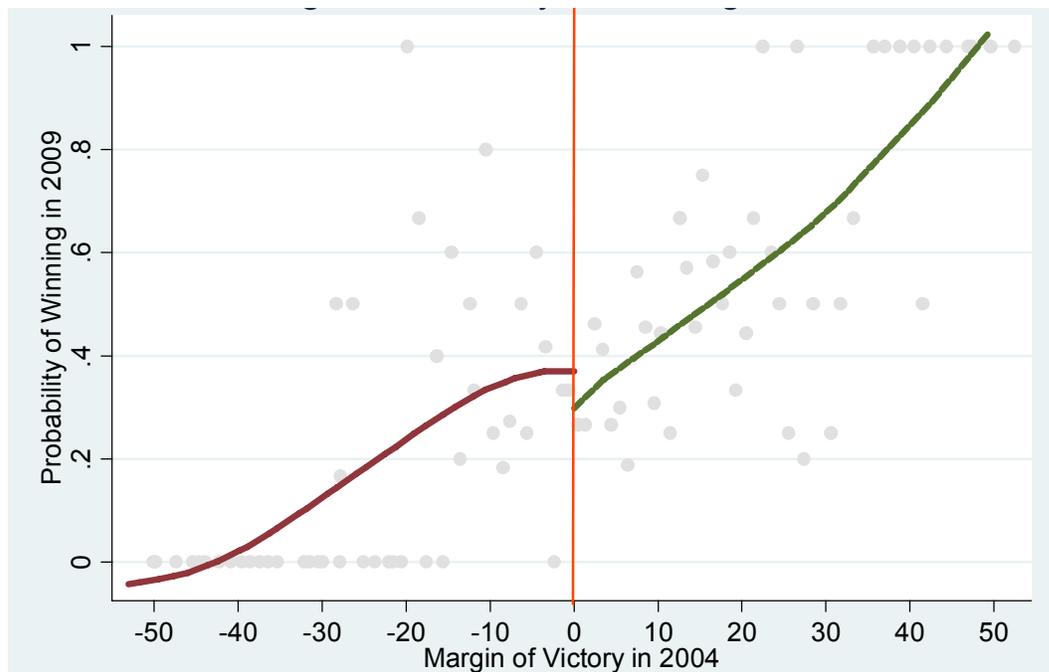


Figure 2. Probability of Winning in 2009

The size of discontinuity between the smoothed local linear regressions on both sides of the margin of victory at zero is -0.264 for 2004 and -0.0978 for 2009 implying that the incumbency disadvantage has declined from 26.4% to 9.8% over the two elections. These effects are statistically significant at 1% level for both the years.

The estimates shown above were based on candidates from all the 543 constituencies comprising both strong and weak incumbents, and non-incumbents.²⁰ The RD design advocates that the incumbency effect can be estimated without bias in closely fought elections in which the characteristics of bare winners and bare losers are the same. In order to check the robustness of the above estimates, we re-estimate the incumbency effects by restricting the sample of candidates to those with an absolute value of the margin of victory less than or equal to 25%, 10% and 5% in election t . The estimates are reported for 2004 and 2009 in table 4. The incumbency disadvantage in 2004 was 21.8%, 20.3% and 21.2% for the restricted samples respectively. Similar estimates for 2009, given in table 4, indicate that the corresponding incumbency disadvantage is 10.1%, 6.9% and 5.6% for the three levels of absolute value of margin of victory. Thus the RD estimates suggest that the incumbency disadvantage declined from 26% in 2004 to 10% in 2009 for the full sample consisting of 543 constituencies and it declined from 20% to 6% for the restricted sample of constituencies in which the margin of victory is less than 5%.

Table 4. Regression Discontinuity (RD) Estimates of Incumbency Effect in the Indian Parliament Elections 2004 and 2009

Year	Dependant Variable	Incumbency Effect (in %)			
		All	Margin of victory ≤ 25	Margin of Victory ≤ 10 %	Margin of Victory ≤ 5 %
2004	Victory Status	-0.264 (0.73)	-0.218 (0.65)	-0.209 (0.61)	-0.212 (0.71)
	Margin of Victory	-5.071 (1.89)	-5.017 (1.83)	-4.963 (1.74)	-4.479 (1.70)
2009	Victory Status	-.0978 (0.039)	-0.101 (0.041)	-0.069 (0.032)	-0.056 (0.031)
	Margin of Victory	-6.94 (2.91)	-6.41 (2.74)	-6.21 (2.65)	-6.05 (2.55)

Note: Standard errors based on bootstrap method are given in parentheses.

Source: Based on Author's Computation.

The overall finding is that there is evidence of anti-incumbency effect during the 2004 and 2009 elections and the effect has declined in 2009 compared to 2004. The huge decline in the anti-incumbency effect over the period may be due to the fact that the number of incumbents who contested in 2009 election itself had declined. As we noted earlier, the political parties might have fielded only strong incumbents in the 2009 elections to counter the anti-incumbency trend that prevailed in India at the time.

²⁰ Incumbents who won with high (low) margin of victory are called strong (weak) incumbents.

5.3 Margin of Victory

Next, the incumbency effect is examined for the election outcome variable namely margin of victory in election $t+1$. Figures 3 and 4 display the incumbent and non-incumbent differences in the margin of victory in election $t+1$ against the margin of victory in election t . As observed earlier, the incumbents faced a disadvantage in the margin of votes also and the disadvantage in the margin of victory has increased from 5.1% in 2004 to 6.9% in 2009.

The incumbency effect on the margin of victory in election $t+1$ is estimated by restricting the sample to margin of victory of 25%, 10% and 5% in election t and the results are reported in table 4. The results show that the incumbents faced a disadvantage of about 5% in 2004 and 6% in 2009. Interestingly, the incumbency disadvantage has increased by a mere one per cent as we move further away from closely fought elections, from an absolute value of margin of victory of 5% to 25%.

Thus the incumbents face a double disadvantage. They not only have a lower chance of victory in the subsequent election but they also win with a smaller margin of votes compared to non-incumbents.

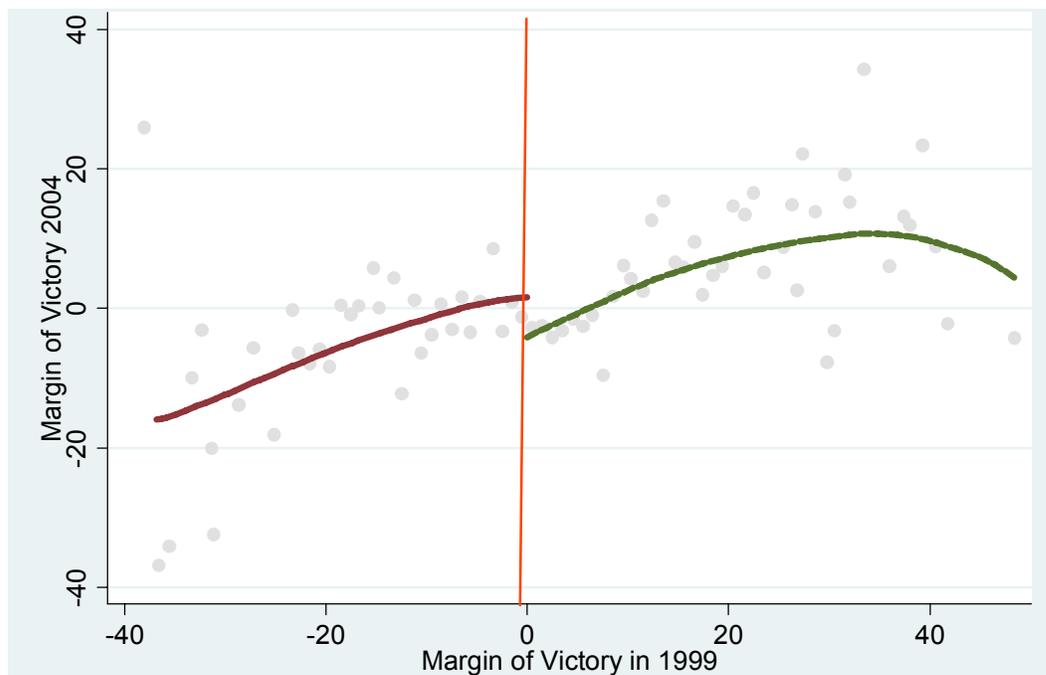


Figure 3. Margin of Victory in 2004 against Margin of Victory in 1999

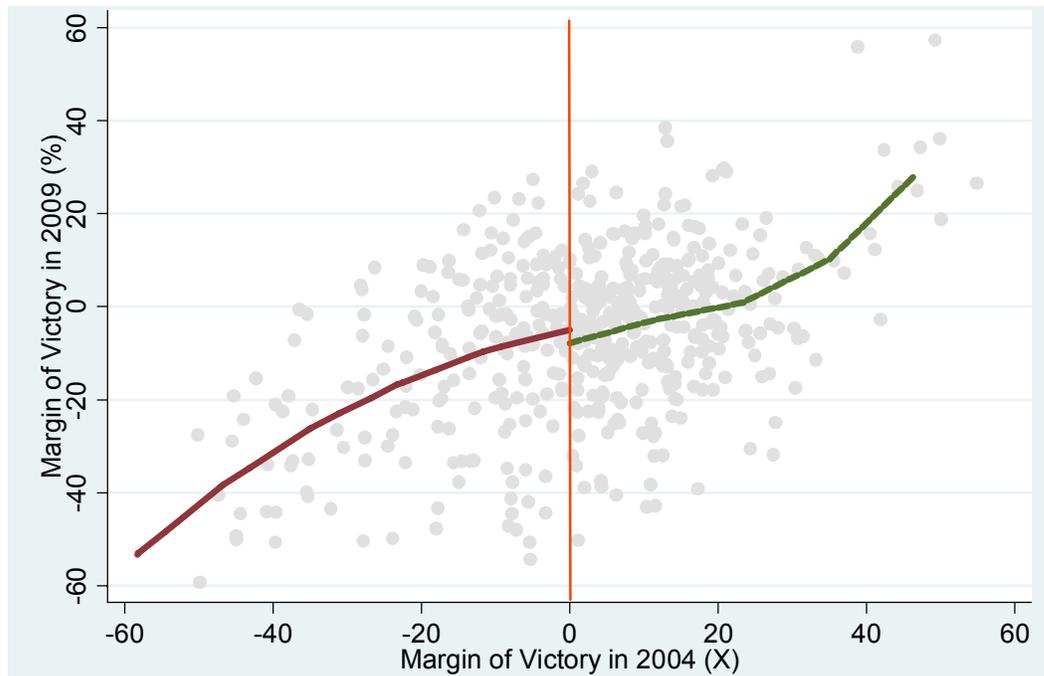


Figure 4. Margin of Victory in 2009 against Margin of Victory in 2004

6. Conclusion

In this paper, we have examined the effect of incumbency status of a contestant in the Indian parliamentary elections on the chances of winning and the margin of victory in the 2004 and 2009 elections using non-parametric model based on RD design. The RD design is applied to overcome the problems arising from non-availability of data on the key determinants, including unobserved factors, of the election outcome. In closely fought elections, the characteristics, such as quality, party influence and other factors, of the bare winners and bare losers tend to be the same. Exploiting this feature of the data, the RD design enables us to estimate without bias the incumbency effect on the chances of winning and margin of victory in the subsequent elections.

The data show that in about one-half to two-third of the constituencies, the margin of victory is less than 10% in the past three parliament elections, which support the application of RD design. The results based on RD design indicate that the incumbents were 26% less likely to win than non-incumbents in 2004 and this declined to 10% in 2009. The incumbents also face a disadvantage in the margin of victory, which was 5% in 2004 and 7% in 2009. The main conclusion emerging from this study is that the incumbents in India face a disadvantage in getting re-elected and the anti-incumbency sentiment among the voters has persisted over the two rounds of elections. This is in sharp contrast to the advantages in re-election enjoyed by the incumbent in mature western democracies such as US, UK, France and Germany.

The incumbency effect is examined here at the national level. It is likely to vary from state to state and it also depends upon whether the candidate is from the ruling party or opposition parties, and freshman or senior. Studying the incumbency effect at the state level using election

outcomes of the state legislators over a period of time will be able to shed valuable insights on voter behaviour.

Why do Indian voters choose to elect non-incumbents to positions of power? Is it due to indulgence in large-scale corruption by the incumbent parliamentarians or is it due to the dissatisfaction with the members of parliament who may not have lived up to the voters' expectations in attending to common man's problems? These issues offer scope for future research and the 2014 election results will open up more avenues for research.

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Appendix

Table A1. Test of difference in the Mean Characteristics of Candidates, Number of Contestants and Voter Turnout by Margin of Victory, 2004 Election

Variables	Margin of Victory (V)					
	All candidates			V ≤ 25 %	V ≤ 10 %	V ≤ 5 %
	Winners	Losers	Difference	Difference	Difference	Difference
Age (in years)	52.65 (0.48)	51.17 (0.36)	1.47** (2.46)	0.29 (0.44)	1.13 (1.26)	1.82 (1.41)
Sex (male = 1, female=0)	0.92 (0.012)	0.92 (0.009)	0.007 (0.48)	0.027 (1.55)	0.039 (1.68)	0.039 (1.22)
Caste (SC&ST =1 General =0)	0.247 (0.019)	0.267 (0.0088)	-0.0199 (-0.85)	0.0029 (0.11)	-0.0071 (-0.20)	-0.0028 (-0.068)
# of Contestants	9.96 (0.21)	10.55 (0.16)	-0.59** (-2.23)	-0.67** (-2.321)	-0.44 (-1.15)	-0.21 (-0.37)
Voter turnout (%)	59.04 (0.51)	58.33 (0.38)	-0.71 (1.12)	1.65** (2.40)	1.03 (1.07)	0.35 (0.27)
# of observations	543	975	1518	1138	602	313

Note: (i) The sample includes candidates secured at least 5% vote share. The mean characters of winners and losers are given only for all candidates and the difference in mean values of winners and losers are given in column heading "Difference".

(ii) Standard errors are in parentheses below the means of winners and losers and 't' values are in parentheses below the mean differences.

(iii) * and ** indicate statistical significance at 1% and 5% levels respectively.

Source: Authors computation.

Table A2. Test of Difference in the Mean Characteristics of Candidates, Number of Contestants and Voter Turnout by Margin of Victory, 2009 Election

Variables	Margin of Victory (V)					
	All candidates			V ≤ 25 %	V ≤ 10 %	V ≤ 5 %
	Winners	Losers	Difference	Difference	Difference	Difference
Age (in years)	53.05 (0.48)	51.96 (0.32)	1.10 (1.95)	0.57 (0.93)	-0.48 (-0.60)	-0.60 (-0.58)
Sex (male = 1, female=0)	0.89 (0.013)	0.91 (0.007)	-0.032** (-2.15)	-0.031 (-1.93)	-0.025 (-1.19)	-0.048 (-1.90)
Caste (SC&ST =1 General =0)	0.904 (0.012)	0.904 (0.0088)	0.0001 (0.007)	-0.0072 (-0.45)	0.0030 (0.15)	0.0094 (0.33)
# of Contestants	14.86 (0.29)	15.44 (0.20)	-0.58 (-1.65)	-0.67 (-1.77)	-0.17 (-0.33)	-0.17 (-0.25)
Voter turnout (%)	59.60 (0.61)	57.31 (0.48)	1.33 (1.86)	2.39* (2.96)	0.95 (0.94)	0.44 (0.35)
Education (in years)	6.69 (0.08)	6.98 (0.06)	-0.29 (-1.83)	-0.21 (-1.63)	-0.15 (-1.03)	-0.16 (-1.50)
Net assets (in lakh of Rupees)	509.94 (63.03)	416.63 (66.24)	93.317 (0.89)	122.97 (1.76)	-44.83 (0.54)	-59.58 (-0.46)
Number of criminal charges	0.78 (0.09)	0.94 (0.08)	-0.16 (-1.25)	-0.26 (-1.86)	-0.20 (-0.98)	-0.229 (-0.96)
# of observations	543	1101	1644	1274	728	406

Notes and source: As given in Appendix table A1.

