Does education affect voting preferences? Evidence from voting records of Indian elections[*]

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Abstract

We investigate the effect of education on voting preferences using actual voting records from the Indian elections. We proxy differences in the educational levels of voters using minimum educational qualifications required for a particular category of voters. Using panel regressions that provide explanatory power of almost 100%, we find that educated voters exhibit progressive preferences. Compared to general voters, educated voters' support is 20% lower for heinous criminals, 20% lower for the corrupt, and 13% more for females. Surprisingly, while general voters differ from educated voters in supporting dubious candidates, both general and educated voters prefer women candidates.

Key Words: Democracy, Crime, Corruption, Election, Educated voters, Gender.

JEL Classification: D72, I20, O10, O50

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I   Introduction

In this paper, we study if educated voters exhibit progressive voting preferences when compared to general voters. The motivation to study this question is compelling. First, whether or not educated voters help a polity has been a question that has grabbed the attention of philosophers since the times of the Athenian philosophers—Plato and Aristotle. While Plato thought that masses were incapable of ruling themselves, Aristotle's views were more in line with universal suffrage. In the mid-nineteenth century, John Stuart Mill had controversially suggested a system of "plural voting" as a solution to the above mentioned problem. In his book titled "Thoughts on Parliamentary reform," published in 1859, Mill suggested an electoral system where (i) voters required a basic level of education to be eligible to exercise their franchise; and (ii) votes were weighted according to the level of education of the voter. Mill had argued that the "one person one vote" principle would perpetuate the "tyranny of majority." Mills system of "Epistocracy" (rule of the knowledgeable) has attracted significant criticism. Some argued that such a system is morally unjust and was a blow to the self esteem of those who were denied the extra privilege. (Arneson (1993); Beitz (1989); and Holmes (1989)). Other scholars have argued that the educated population can act in its own interest to the detriment of others (Estlund (1986)). Despite intense philosophical debate, scholars have found it difficult to empirically test Mills assertions.

In fact, Mill's "tyranny of majority" is exemplified by the persistence of politicians with dubious characteristics in the developing world. In the largest democracy in the world – India – 29% of all legislators face criminal charges and 14% of them are charged with heinous crimes such as rape, murder, kidnapping, etc.[1] Recently the government of Uttar Pradesh (the most populous state in India with a population in excess of 200 million) re-inducted a legislator into the ministry despite the concerned person facing eight criminal charges.[2]

Second, studying this question can also help to shed light on recent theories for the effect of education on voting preferences. The "institutional hypothesis" (Acemoglu and Robinson (2001), Acemoglu, Johnson, Robinson, and Yared (2008)) claims that both economic development and quality of democracy are co-determined by the strength of a country's institutions.[3] These views are challenged by the newly emerging "information

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[1]Source: http://www.thehindu.com/opinion/blogs/blog-datadelve/article4970323.ece.

[2]Source: http://articles.economictimes.indiatimes.com/2013-10-12/news/42968526_up-cabinet-raja-bhaiya-deputy-sp-zia-ul-haq

[3]Related to the "institutional hypothesis", the "modernization hypothesis" (Lipset (1959), Lerner (1958)) posits a direct link between socioeconomic development and the quality of democracy. Factors such as urbanization, wealth and education are associated with higher quality of democratic governments (Lipset (1959)). Since the quality of institutions and socioeconomic development are highly correlated for an economy, the empirical implications of these two hypotheses are not very different.

hypothesis", which claims that poor voters select poor candidates because poor voters lack information about these candidates. Therefore, government programs aimed at improving information disclosure can alleviate the problem of poor candidate selection (Ferraz and Finan (2008), Chong, De La O, Karlan, and Wantchekon (2010), Banerjee, Kumar, Pande, and Su (2010)). These hypotheses predict that educated voters exhibit preference for better candidates.

Theories of political capture by special interest groups (Bardhan and Mookherjee (2000), Grossman and Helpman (1996)) predict the opposite. If the elite capture the political process by colluding with nefarious elements in a society, they may prefer dubious candidates to perpetuate *status quo*. Bardhan and Mookherjee (2000) show that lack of political awareness, wide disparity in awareness, and cohesiveness of interest groups provide ideal conditions for capture by the elite. With more than a quarter of its population still illiterate, India fits the bill reasonably well for such capture.

We examine the effect of education on voting preferences using the actual voting records maintained by the Election Commission of India. India provides an ideal environment to examine the above question. First, India is the world's largest democracy: the number of Indians that voted in the national elections in 2014 exceeds the total population of the US, UK and Russia put together! Second, free and fair elections are held in India every five years. Third, differences in educational attainment are quite stark among voters in India.

Finally, an institutional feature in India enables us to proxy for differences in the educations levels of voters. In India, officers in charge of election duty, army personnel and embassy staff have the option of exercising their franchise through a postal vote. General voters *do not* have this option. The Election Commission of India maintains separate records of postal and general votes secured by each candidate. As we explain in detail in Section III, officers in charge of election duty comprise school and college teachers, state government officials, members of the armed forces and other government employees. The minimum education qualifications required for these government servants are codified in various Acts. Such requirements ensure that postal voters differ significantly from the general voters in the level of educational attainment. We therefore employ postal voters as our treatment group for estimating the effect of education on voting preferences; general voters serve as the control group. Because the minimum educational requirements for government servants were set long before the elections we study, the assignment of voters into treatment and control groups remains exogenous in our setting.

We combine data on the postal and non-postal votes secured by a candidate together with data on candidate characteristics to create our final dataset. Complete data on postal votes is available only for the national level elections held in 2004 and 2009. Therefore,

our analysis is focussed on these two elections. We obtain information for 8070 candidates that contested the elections for the lower house of parliament (popularly known as the Lok Sabha) in 2009 and 5435 candidates that contested the 2004 elections.

To study the hypothesized effects, we undertake panel regressions that include fixed effects for (i) vote category (postal/general) in each constituency, and (ii) year of the election. The (constituency, vote category) fixed effects enable us to control for the possibility that the difference between the preferences of the postal voters and the general voters is different in each constituency. The election year fixed effects enable us to control for secular time trends. In additional specifications, we add candidate fixed effects to the above set of fixed effects and consistently obtain an adjusted R-squared of above 96% across all our tests. Thus, we account for almost all possible determinants of the votes received by a candidate in the postal and the general categories. In these tests, we focus on estimating a difference-in-difference as follows. To fix ideas, take the case of candidates charged with a crime. We first estimate the difference in postal votes received by candidates charged with a crime and the same received by other candidates. Then, we estimate the same difference in general votes. This difference provides an estimate of the counterfactual question: what would the difference in the votes received by these candidates have been if the voters were not educated? Having accounted for all possible determinants of votes received, the difference between these two differences provides a causal estimate of the effect of education on the preference for candidates charged with a crime.

Our findings support the hypothesis that educated voters choose better candidates. When compared to general votes, the difference in educated voters' support for candidates with criminal records vis-à-vis other candidates is lower by 7.9%. Because politically motivated frivolous charges may account for some of the criminal records of the candidates, we examine crimes that are considered as heinous under the Indian Penal Code. These include grave offenses such as rape, murder, kidnapping, etc. Information about such crimes needs to be reported separately in the affidavits filed by the candidates. We find that when compared to general voters, the difference in educated voters' support for candidates charged with heinous crimes vis-à-vis other candidates is 46.5% lower. Thus, educated voters exhibit significantly greater dislike for candidates charged with heinous crimes when compared to those charged with non-heinous crimes.

We then test if educated voters are less likely to support candidates that have acquired wealth through dubious methods. To proxy such candidates, we first classify candidates based on their net assets into below and above the median. We find that educated voters' support is lower for candidates with higher net assets. However, this result could be due to wealth acquired through legitimate means as well as wealth acquired through dubious

methods. To disentangle these effects, we classify as corrupt those candidates who possess above median wealth *and* are charged with any crime. We find that when compared to general voters, difference in the educated voters' for corrupt candidates vis-à-vis other candidates is 26.5%.

To examine other dimensions of the progressive voting preferences of educated voters, we test if educated voters exhibit a preference for female candidates. The key question here is whether education alters one's beliefs about the role of women in a traditional society. Our study suggests an affirmative answer. We find that when compared to general voters, the difference in educated voters' support for female candidates vis-à-vis male candidates is greater by 12.7%.

Surprisingly, in a traditional society such as India, where stereotypical beliefs about women's role in society are persistent, both general and educated voters exhibit strong preference for women candidates. This is in contrast to the preferences for other candidate characteristics, where general voters differ from educated voters in supporting dubious candidates, i.e. candidates with a criminal record, especially those charged with heinous crimes, and corrupt candidates. Such support for dubious candidates is consistent with voters in developing countries supporting inferior candidates due to reasons such as clientelism (Huntington, Nelson, et al. (1976)), vote buying, election malpractices (Blaydes (2006)) and intimidation (Bratton (2008)).

To investigate if our results are consistent with the institutional or information theories, we study the above relationships separately for the developed and the less developed states in India.[4] If education leads to better candidate choice through modernization and better institutions, then this effect is likely to manifest disproportionately more in the developed states when compared to the less developed states. In contrast, if educated voters are better informed, then the effect is likely to be equally strong in the developed and the less developed states. We find that the above effects are similar for the developed and the less developed states. Thus, our results are consistent with the information hypothesis.

We can rule out the possibility that our results are driven by educated voters colluding with the incumbents. First, institutional aspects feature of the Indian political system alleviate such a concern. The Election Commission of India is a constitutionally independent body that conducts elections in India. Allocations of officers for election duty is done under the overall supervision of the Election Commission. Political parties have no

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[4]A committee set up under the chairmanship of Dr.Raghuram Rajan, the then chief economic advisor to the Government of India, classified 10 states in India as less developed: Arunachal Pradesh, Assam, Bihar, Chattisgarh, Jharkhand, Madhya Pradesh, Meghalaya, Odisha, Rajasthan, and Uttar Pradesh. We classify all other states as developed. Source: http://www.finmin.nic.in/reports/Report_CompDevState.pdf.

role to play in the posting of electoral officers. Second, a significant number of incumbent candidates possess dubious characteristics. If educated voters were colluding with the incumbents, they should be more likely to support dubious candidates, which is not what we find.

Our results show that even in a developing economy, where institutions are likely to be weak, educated voters exercise better judgement. Our findings about the progressive voting preferences of educated voters in the less developed states has significant import. Human development indicators in these states are comparable to Sub-Saharan African countries. Yet, educated voters in these states choose better candidates. Therefore, our evidence highlights the importance of education in improving the quality of democracies even in the less developed countries.

The paper is organized as follows. Section II briefly describes the related literature. Section III describes the institutional framework and the system of postal voting. Section IV details our data. Section V describes our empirical strategy and results. Section VI concludes.

II   Literature Review

A number of studies have tried to unearth the relationship between education levels of the electorate and democratic practices. Though the literature has documented a positive association between these variables in the developed countries, no such clear positive association has been found in developing and poor countries. Milligan, Moretti, and Oreopoulos (2004) find that in the US and the UK the level of education attained by a citizen is related to several measures of political involvement. Pande (2011) finds mixed evidence regarding the association between education and political participation in African countries.[5]

Several studies have employed randomized controlled experiments to establish a link between the availability of information and improvements in democratic practices. Chong, De La O, Karlan, and Wantchekon (2010) examine if the institutional form of campaigning increases the credibility of poll promises and hence voter responsiveness. During the elections in Benin, they organized conferences involving policy experts and politicians in the treatment areas. The control villages received the usual campaign messages. Their survey results showed that voter turnout in treatment villages increased by 7.3% and

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[5]Wolfinger, Rosenstone, and McIntosh (1981) show that in the US, a person possessing a college degree is 38% more likely to vote than a person with less than five years of education. Brady, Verba, and Schlozman (1995) confirm such an association in the US. Fornos, Power, and Garand (2004) do not find any significant positive association between literacy and voting in Latin America.

incidence of vote buying reduced significantly. Their survey also revealed that the voters in treatment villages thought that the campaign was more credible. As well, candidates who participated in the experiment garnered more votes in the treatment villages when compared to the control villages. Banerjee, Kumar, Pande, and Su (2010) conducted randomized field trials to assess the impact of information on the voting pattern in municipal elections in Delhi – India's national capital. They devised a performance metric for incumbent councilors. This metric was based on their committee attendance, participation in the legislature and expenditure of municipal development funds allotted to the councilor. They also used the data regarding criminal charges against the candidate, his/her assets and education. They made this information widely available in the treatment slums with the help of a popular newspaper. They also employed a non-governmental organization to explain this information to the treatment sample. They found that not only does the overall turnover increase in treatment areas but also the vote share of the best performing candidates increases by approximately 7%. They also found that the incidence of vote buying decreased by about 13% in the treatment areas. Chong, De La O, Karlan, and Wantchekon (2010) study the relationship between information and voter choice in Mexico. They find no change in the vote share of the incumbent party in places with high corruption. They also document higher support for the incumbent party in treatment areas that witnessed higher government spending on poverty alleviation. One theme that comes out of all these studies is that the availability of information changes the way voters vote in developing countries. We complement these studies by utilizing *actual* voting records of the treatment group in our setting — educated voters — to highlight their progressive voting preferences.

Aidt, Golden, and Tiwari (2011) show that the tendency to field candidates with criminal records has risen over time in India. Many studies have looked at the possible reasons for voters voting for candidates with known criminal charges. Huntington, Nelson, et al. (1976) show that voters, mostly in the less developed regions, treat their votes as a means to repay their patrons. Thus, clientele tendencies lead voters to ignore a candidate's dubious characteristics. Finan and Schechter (2012) highlight vote buying as a reason for the persistence of bad quality politicians. Bratton (2008) points out that intimidation of the voters could also influence the decision to vote. Besley, Pande, Rahman, and Rao (2004) and Besley, Pande, and Rao (2007) show that voters may prefer candidates from the same ethnic group to which they belong. As a result, publicly known negative candidate attributes may not matter for the electorate. Studies have also investigated the reasons why political parties field such candidates. Vaishnav (2011) shows that parties field candidates with criminal background as these candidates act as self-financing units, thereby freeing parties from funding such candidates' expenses. In contrast to these studies, we find that voting preferences of the educated voters are

similar across the less developed and the developed states. Thus, we infer that clientele tendencies may not necessarily be stronger in the less developed regions.

Our paper is also related to studies examining voter support for women candidates. Beaman, Chattopadhyay, Duflo, Pande, and Topalova (2009) find that those villages in the Indian state of West Bengal that at any point had a woman as the council chief support women candidates more than villages that never had a women council chief. Chattopadhyay and Duflo (2004) examine the functioning of 265 village councils in the Indian states of West Bengal and Rajasthan and find that reservation of seats to women affects the kind of public goods the council invests in. Women councilors invest more in infrastructure relevant to women such as water, sanitation, etc. Bhavnani (2009) examines the role of women councilors in the urban setting of Mumbai.[6] He finds that in constituencies that were reserved for women in the previous elections and not reserved in the election that he studied, women have five times higher chance of winning when compared to the constituencies that were not reserved for women in the previous election. In contrast to these studies, we examine if support for women candidates is different among educated voters and general voters. We also examine if this support varies within the country between the developed and the less developed states.

Finally, our study is also related to studies examining corruption in public service. Olken (2007) shows for Indonesian road projects that government audits reduce corruption by reducing missing expenditure by about 8%. Bobonis, Fuertes, and Schwabe (2009) show that the possibility of audit and public dissemination of audit results reduced corruption in Puerto Rico. Our study documents that educated voters dislike candidates that have possibly acquired wealth through corrupt methods.

III   Institutional Background

III.A   The Indian Political System

India follows a Westminster type of parliamentary democracy with an elected President as the head of the state. The Prime Minister, who heads the council of ministers, wields *de facto* authority. India has a bicameral legislature. Members of the lower house, known as the Lok Sabha, are directly elected by the people while members of the upper house, known as the Rajya Sabha, are elected by elected state and central representatives. The Prime Minister is the leader of a party or a coalition that enjoys a majority in the lower house.

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[6]Mumbai is regarded as the commercial capital of India.

India is one of the few developing countries to have had a virtually uninterrupted democratic form of government.[7] The Indian National Congress dominated all state elections until 1967 and all central elections until 1977. A number of regional parties emerged in the 1980s. The Bhartiya Janata Party (BJP) emerged as a strong opposition party in the 1990s after winning several state elections and the national election in the late 1990s. Today the political landscape in India comprises of the ruling National Democratic Alliance headed by the BJP, the opposition United Progressive Alliance (UPA) headed by the Indian National Congress, and a host of other regional parties. As per the estimates released by the Election Commission of India, the number of eligible voters in India is approximately 725 million, making it by far the largest democracy in the world. The country is divided into 543 Lok Sabha constituencies.[8] Free and fair elections are held once in five years.

Indian elections have been hailed as free and fair by independent international media outlets.[9] Even the United Nations Development Program showcases India's elections as a role model for new democracies.[10] A constitutionally created strong and independent Election Commission has contributed towards thriving of democratic practices in India. The Constitution of India has entrusted the superintendence, direction and control of the entire process for conduct of elections in India with the Election Commission. The Election Commission is a permanent constitutional body. The commission consists of a Chief Election Commissioner and two other Election Commissioners. The dismissal of an Election Commissioner can only happen through an impeachment process, which is akin to the process required to be followed for the dismissal of the Chief Justice of the Supreme Court. This ensures the independence of the Election Commission. In fact, the entire administrative machinery reports to the Election Commission during election time. Political parties have no role to play in the posting of electoral officers.

III.B   Postal Voters and Education

As argued in the Introduction, higher education level of postal voters, which in turn stems from legally codified minimum educational requirements for government servants, provides us an instrument for educational differences among voters in India.

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[7]Between 1975-1977, Indira Gandhi, the then Prime Minister of India, imposed emergency. Fundamental rights were suspended at that time. Fresh elections were held in 1977 and Indira Gandhi's party was badly defeated.

[8]A Lok Sabha constituency is approximately equal to a revenue district.

[9]Source:http://www.newyorker.com/online/blogs/newsdesk/2014/05/the-stunning-result-in-indias-elections.html

[10]http://www.in.undp.org/content/india/en/home/ourwork/democraticgovernance/successstories/india-election-diary-2014–namibias-electoral-team/

Before describing postal voters and their educational qualifications, a brief description of educational attainment of the average population is in order. In 2001, the literacy rate in India stood at 64.7%[11] and the same improved to 75.2% in 2011.[12] Reports from the census also reveal that among the literate, only 6.7% are graduates, 11% have had at least 12 years of formal schooling and only 24.2% of the literate people have cleared matriculation, which equals ten years of formal schooling.[13] Thus *only 18.2%* of the population has cleared matriculation, i.e. eleven years of formal schooling.

As per the Conduct of election rules 1961, postal voting[14] is allowed for the following categories of voters.[15]

a. Voters on election duty: State government employees serve as officers on election duty. This group is dominated by school and college teachers employed in institutions run by the state government. As laid down by the National Council for Teacher Education Act, 1993, matriculation, i.e. eleven years of formal schooling, is the minimum qualification required to be eligible for any of these positions. These officials receive extensive administrative and other training in the course of their work.

b. Service Voters: Service voters include members of the armed forces, members of the police force of a state who are required to serve outside the state and Indian embassy staff working abroad. Even the lowest level of officers in the armed forces need to have cleared matriculation, i.e. eleven years of formal schooling.[16] Moreover they receive regular training in matters pertaining to administration and law and order. Higher level officers have to clear competitive exams after attaining graduation. Working in the Indian embassy also requires a high level of education.

c. Special Voters: These are voters who are declared as special voters by the President of India and include the President, the Vice President, the Governors of states, etc. These are not numerically significant.

d. Spouses of electors mentioned in (a) and (b): Officials are posted on election duty for at most a week. Hence, these officials are unlikely to be accompanied by their spouses. Members of the armed forces cannot be accompanied by their spouses. Thus, even though this category of postal voters is defined, they are numerically insignificant.

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[11]Source: http://censusindia.gov.in/Census_And_You/literacy_and_level_of_education.aspx
[12]Source: http://www.censusindia.gov.in/Ad_Campaign/press/DataHighlghts.pdf
[13]Source: http://censusindia.gov.in/Census˙And˙You/literacy˙and˙level˙of˙education.aspx
[14]Source: http://eci.nic.in/archive/handbook/returning-officer/rch10/rch10_1.htm
[15]Source: http://lawmin.nic.in/ld/subord/cer1.htm
[16]Source: http://joinindianarmy.nic.in/inner.aspx?status=l1

Apart from these four categories notified voters[17] and others constitute the residual category of postal voters. In the 2004 and 2009 elections, these categories accounted for less than 0.86% and 0.5% of the postal voters respectively. Therefore, these two residual categories as well as categories (c) and (d) are numerically insignificant.

Despite the postal voters being more educated on average, they do not necessarily belong to the elite sections of the Indian society. India follows a policy of positive discrimination in government jobs by reserving a portion of government jobs for the less developed communities. In all the states up to 50%[18] of the jobs are reserved for the Scheduled Castes (SC), Scheduled Tribes (ST) and other backward classes.[19] Thus, one major segment of postal voters (electoral officers who are government employees) has a proportionate representation of the backward classes. Moreover, as mentioned in Section III.A, political parties have no role to play in the posting of electoral officers during elections. As a result, it is unlikely that educated voters would be systematically colluding with the incumbents.

IV   Data and Summary Statistics

Our data is collected from the Election Commission of India, which maintains data regarding votes secured by each candidate in an election. Data pertaining to postal votes secured by each candidate is maintained separately. This data is available for the 2004 and 2009 parliamentary elections. However, it is not available for all state government elections. The Election Commission's website also provides information regarding the party affiliation and age of the candidates.

In response to a public interest litigation by the Association for Democratic Reforms,[20] in 2002, the Supreme Court of India made it mandatory for candidates contesting elections to disclose criminal, financial and educational background. The Association for Democratic Reforms compiles such information filed by the candidates and discloses it publicly. We use this information to analyze candidate characteristics. In this study,

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[17]Election Commission has the power to confer postal voting rights through a notification. However, we did not come across any such notifications in the two elections we study.

[18]The Supreme Court of India has ruled that such reservations cannot exceed 50%.

[19]Scheduled castes and tribes belong to the lowest echelons of the Indian society. They were considered as untouchables and were discriminated against in almost all walks of life. In 1989, the then Prime Minister V.P. Singh introduced 27% reservation in favor of a number of others castes known as other backward castes. As per census records 16.2% of the population belong to the scheduled caste category and 8.2% belong to the scheduled tribe category.

[20]A non-governmental organization started by some professors of the Indian Institute of Management, Ahmedabad. Since 2002, the Association for Democratic Reforms (ADR) has been conducting election watches by publicising information on the financial, criminal and educational characteristics of all candidates contesting state level assembly elections as well as parliamentary elections.

we use information pertaining to all those candidates who contested Lok Sabha elections either in 2004 or 2009 or in both the elections. Fisman, Schulz, and Vig (2014) use the above data to show that asset growth of incumbents exceeds that of the challengers.

As shown in Panel A of Table 1, the average number of cases faced by each candidate was 0.37 in 2009 when compared to 0.39 in 2004. All candidates are required to report charges related to heinous crimes such as murder, rape, kidnapping separately. The total number of candidates charged with heinous crimes equalled 1062 in 2009 when compared to 514 in 2004. These figures substantiate concerns raised in Section 1 regarding persistence of low quality candidates. The average value of net assets per candidate has increased from INR 13 million in 2004 to INR 18 million per candidate in 2009. The median candidate was a graduate in 2004 while such a candidate had passed 12th grade in 2009. Average age of the candidates has fallen from 47.6 years in 2004 to 46 years in 2009.

We use the Raghuram Rajan committee report (2013) regarding the overall development in Indian states to classify states as developed and less developed. We classify states that are considered least developed by the committee as less developed states. All other states are classified as developed states. Panel B of Table 1 makes a summary comparison between candidates who contested in the developed states and those who contested in the less developed states. As expected, criminal charges against a candidate are higher on average in the less developed states (0.49) when compared to the developed states (0.3). Similarly, an average candidate faces 0.1 heinous criminal charges in the less developed states while an average candidate in the developed states faces 0.06 heinous criminal charges. These differences are statistically significant. Candidates from the less developed states have lower total assets (INR 10 million per candidate) when compared to candidates from the developed states (INR 20 million per candidate). Surprisingly, there is no difference between the developed and the less developed states in terms of the average number of women candidates per constituency. The median candidate has passed 12th grade in both the less developed and the developed states.

V Empirical strategy and results

V.A Basic tests

As described in the Introduction and in Section III.B, the minimum education qualifications required for government servants ensure that postal voters have a significantly higher level of education when compared to the general voters. We therefore employ

postal voters as our treatment group for estimating the effect of education on voting preferences; general voters serve as the control group. Because the minimum educational requirements for government servants were set long before the elections we study, the assignment of voters into treatment and control groups remains exogenous in our setting.

Therefore, we employ a difference-in-difference estimation to estimate the causal effect of education on voting preferences. We compare the postal votes secured by a candidate possessing a particular characteristic with those secured by a candidate not possessing the characteristic. To account for confounding effects, we then estimate the same difference for the general votes. The difference between these two differences provides an estimate of educated voters preference for candidates possessing the particular characteristic. First, to examine the effect of education on candidates charged with crime, we implement this empirical strategy using the following regression specification:

$$
\begin{aligned}
Y_{ijct} = \alpha &+ \nu_{cj} + \theta_t + (\beta_0 + \beta_1 * CriminalCases_{ict}) * PostalDummy_j \\
&+ \beta_2 * CriminalCases_{ict} + \beta * X_{ict} + \epsilon_{ijct}
\end{aligned}
\tag{1}
$$

The dependent variable Y_{ijct} equals the log of one plus the number of votes secured in category j (postal/general) by candidate i contesting from constituency c in election t. We have added one to the number of votes because some candidates do not receive any vote. As a robustness check, in an unreported analysis, we re-run the tests using a Poisson regression. The results from the Poisson regressions confirm that the interpretation of the economic magnitudes are unaffected by adding one to the log of the votes; this is expected because the number of votes are quite large compared to one and $\log(1 + Y_1) - \log(1 + Y_2) = \log\left(\frac{1+Y_1}{1+Y_2}\right) \approx \log\left(\frac{Y_1}{Y_2}\right)$ if $Y_1 \gg 1, Y_2 \gg 1$.

The independent variable $PostalDummy_j$ takes the value of 1 when the category j corresponds to postal votes and takes the value of 0 when the category j corresponds to general votes. X_{ict} denotes the set of other candidate characteristics that we control for. The variable ν_{cj} represents fixed effects for (constituency, vote category) pair. These fixed effects enable us to control for the possibility that the difference in preferences of educated voters vis-à-vis general voters is different for each constituency. θ_t is a dummy for election, which takes the value of 1 for 2009 and 0 for the 2004 Lok Sabha election. The standard errors are clustered at the constituency level.

The results from running regression equation (1) are presented in Column 1 of Table 2. First, we notice that the coefficient of $CriminalCases_{ict}$ is positive. The literature has shown that voters in developing countries may support inferior candidates due to reasons such as clientelism (Huntington, Nelson, et al. (1976)), vote buying, election mal-practices (Blaydes (2006)) and intimidation (Bratton (2008)). The positive correlation

of CriminalCases$_{ict}$ with the number of votes is in line with the effects documented by these studies. Economically, an additional criminal charge is associated with a 17.8% ($= exp(0.164) - 1$) increase in votes received.

The key coefficient of interest, however, is that of the interaction term $CriminalCases_{ict}*$ $PostalDummy_j$; this coefficient captures a difference-in-difference:

$$
\begin{aligned}
\beta_1 \quad = \quad & \left(E(Y|\beta X)_{\text{Candidates facing criminal charges}} - E(Y|\beta X)_{\text{other candidates}} \right)\big|_{\text{Postal Votes}} \\
& - \left(E(Y|\beta X)_{\text{Candidates facing criminal charges}} - E(Y|\beta X)_{\text{other candidates}} \right)\big|_{\text{General Votes}} \quad (2)
\end{aligned}
$$

where $E(Y|\beta X)$ denotes the expectation of $Y(= log(1 + votes))$ conditional on other covariates. In column 1, the coefficient estimate for β_1 is negative and statistically significant at the 1% level. Economically, when compared to general voters, the difference in educated voters' support for candidates with criminal charges vis-à-vis candidates without criminal charges is lower by 4.8% ($= exp(-0.049) - 1$). In Column 2, we include other candidate characteristics such as the decile of net assets, the level of education, and age of the candidate. To capture the education level of a candidate, we have indexed the different levels of educational qualification; a higher index represents a higher level of qualification. This index is displayed in Appendix A2. After we include these characteristics, the positive correlation between the number of criminal cases and the number of votes decreases from 17.8% to 11.5%. However, the coefficient estimate for β_1 remains unchanged.

Next, in column 3 of table 2, we examine the effect of the assets possessed by a candidate on educated voters' preference for the candidate. We employ the following regression specification:

$$
\begin{aligned}
Y_{ijct} = \alpha + \nu_{cj} + \theta_t + (\beta_0 + \beta_1 * NetAssets_{ict}) * PostalDummy_j \\
+ \beta_2 * NetAssets_{ict} + \beta * X_{ict} + \epsilon_{ijct}
\end{aligned} \quad (3)
$$

where the dependent variable Y_{ijct} is as defined in equation (1). The coefficient of decile of net assets is positive and statistically significant; economically, if a candidate moves up by a decile in terms of his/her net assets, the same increases the votes obtained by 45.5% ($= exp(0.375) - 1$). The key coefficient of interest again is that of the interaction term $NetAssets_{ict} * PostalDummy_j$, which represents a difference-in-difference:

$$
\begin{aligned}
\beta_1 \quad = \quad & \left(E(Y|\beta X)_{\text{Candidates with high net assets}} - E(Y|\beta X)_{\text{Candidates with low net assets}} \right)\big|_{\text{Postal Votes}} \\
& - \left(E(Y|\beta X)_{\text{Candidates with high net assets}} - E(Y|\beta X)_{\text{Candidates with low net assets}} \right)\big|_{\text{General Votes}}
\end{aligned}
$$

$$(4)$$

where $E(Y|\beta X)$ is as defined above. We notice in column 3 that the coefficient estimate for β_1 is negative and statistically significant. Economically, when compared to general voters, the difference in educated voters' support for a candidate that ranks one decile higher with respect to net assets is lower by 3.4% ($= exp(-0.035) - 1$). One could argue that this reflects lower support among educated voters for corrupt candidates when compared to general voters. But it is simplistic to link net assets with corruption. We examine the impact of corruption through a novel proxy for corrupt candidates later in this section. In Column 4, we include the other candidate characteristics that we have included in column 2. After we include these characteristics, the positive correlation between the decile of net assets and the number of votes decreases from 45.5% to 36.34%. However, the coefficient estimate for β_1 remains unchanged.

Finally, in column 5 of table 2, we include the interaction of the postal vote dummy with both $CriminalCases_{ict}$ and $NetAssets_{ict}$:

$$Y_{ijct} = \alpha + \nu_{cj} + \theta_t + (\beta_0 + \beta_1 * CriminalCases_{ict} + \beta_2 * NetAssets_{ict}) * PostalDummy_j$$
$$+ \beta_2 * NetAssets_{ict} + \beta * X_{ict} + \epsilon_{ijct}$$

$$(5)$$

Now, the key coefficients of interest are those of β_1 and β_2, each of which represents a difference-in-difference. Without the inclusion of candidate fixed effects, we find that the coefficients for these interaction effects continue to be negative and statistically significant. The economic magnitudes are slightly lower in column 5. Economically, when compared to general voters, the difference in educated voters' support for candidates with criminal charges vis-à-vis candidates without criminal charges is lower by 4.3% ($= exp(-0.044) - 1$). Similarly, when compared to general voters, the difference in educated voters' support for a candidate with net assets in one higher decile is lower by 3.1% ($= exp(-0.032) - 1$).

Next, we run regression equations (1), (3) and (5) after adding candidate fixed effects to the set of fixed effects already included in the above tests. The results for these tests are reported in Table 3. We find that all coefficients are of the same magnitude and sign with similar level of significance. We note that in all these specifications the adjusted R^2 is about 97%. Such a high measure for the adjusted R^2 suggests that almost all determinants of the votes received by a candidate in each category (postal/general) are accounted for in our empirical specifications. Therefore, concerns for an omitted variable potentially biasing our estimates are minimized. Also, in our tests, when we compare the coefficient estimates for β_1 in Table 2 and Table 3, we notice that the coefficient estimates remain unchanged. Formally, because $\hat{\beta} = \beta + E((X'^{-1}(X'\epsilon))$, we can infer that the second term in the equation $(E((X'^{-1}(X'\epsilon)))$ is zero since there is no change in coefficient estimates between Table 2 and Table 3. Thus, unobserved candidate characteristics are unlikely to be correlated with differences in preferences between the educated and general voters.

V.B Heinous Crime Charges

Petty cases may be filed against candidates contesting elections to malign them.[21] To separate such an effect from educated voters' preference against candidates charged with crime, we use data on a candidate being charged for a heinous crime such as murder, rape, kidnapping, etc. If educated voters' support decreases with an increase in criminal charges, the decrease should be even higher when the charges are heinous in nature. Among all the candidate characteristics, heinous crime represents an unambiguous negative characteristic. Therefore, we expect a sharper difference between educated voters and other voters in their preference for candidates charged with heinous crimes. We run the following regression specification to test the above hypothesis:

$$Y_{ijct} = \alpha + \nu_{cj} + \theta_t + \beta_0 * PostalDummy_j + \beta_1 * HeinousCrime_{ict} * PostalDummy_j$$
$$+ \beta_2 * HeinousCrime_{ict} + \beta * X + \epsilon_{ijct}$$

(6)

Here $HeinousCrime_{ict}$ represents a dummy that takes the value of 1 if a candidate i contesting election t in constituency c is charged with a heinous offense and zero otherwise. All other variables are as defined in equation (1).

The results from running the regression equation (6) are presented in Column 1 of Table 4. We notice that the coefficient of $HeinousCrime_{ict}$ is positive and significant. This indicates that overall support for candidates charged with heinous crime is 2 times $(= exp(1.103) - 1)$ more when compared to other candidates, which is consistent with voters in developing countries supporting candidates with dubious characteristics.

The key coefficient of interest, however, is the interaction term $HeinousCrime_{ict} * PostalDummy_j$, which captures the difference-in-difference:

$$\beta_1 = (E(Y|\beta X)_{\text{Candidate charged with heinous crime}} - E(Y|\beta X)_{\text{other candidates}})|_{\text{Postal Votes}}$$
$$- (E(Y|\beta X)_{\text{Candidate charged with heinous crime}} - E(Y|\beta X)_{\text{other candidates}})|_{\text{General Votes}}$$

(7)

where $E(Y|\beta X)$ is as defined before. In Column 1, the coefficient estimate for β_1 is negative and statistically significant at the 1% level. Economically, when compared to general voters, the difference in educated voters' support for candidates charged with heinous crime vis-à-vis other candidates is lower by 30.2% $(= exp(-0.360) - 1)$. In Column 2, we include other candidate characteristics and find that the positive correlation between

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[21]Such instances are not uncommon. See for example, this articles talks about a court ruling in such cases. http://www.indianexpress.com/news/sc-dismiss-frivolous-petitions-against-elected-candidates/679774/

HeinousCrime$_{ict}$ and the number of votes decreases from 2.4 times to 51.9%. A part of the reduction in the coefficient can be attributed to the effect of inclusion of number of criminal cases as a control. Here again, the coefficient estimate of β_1 is still negative and significant. This shows that, when compared to general voters, the difference in educated voters' support for candidates charged with heinous crime vis-à-vis other candidates is lower by 20.1% ($= exp(-0.225) - 1$). This further highlights the ability of the educated voters to differentiate candidates based on their known characteristics. As expected, the coefficient is not only statistically significant but also economically very large.

Next, we run the specification by including candidate fixed effects apart from the set of fixed effects already included in the above tests. We do not observe any change in the coefficient estimate of the interaction term (Table 5 Column 1). The adjusted R^2 of about 97% indicates that our coefficient estimates are not affected by omitted variables.

V.C   Impact of Corruption

We next examine if the educated voters are able to differentiate between corrupt candidates and others. In a country with a very slow moving judicial process, classifying candidates as corrupt only after they get convicted is likely to lead to an underestimation of corrupt candidates. On the other hand, treating high net assets as a proxy for corruption would lead to an overestimation because the source of wealth could be genuine in many cases. High economic growth seen in the recent years has given birth to many billionaires in India. We therefore construct a novel proxy for corruption. We assume that a candidate with a high net worth *and* a high number of criminal charges is more likely to have acquired wealth through dubious means when compared to other candidates. We test if the support among educated voters is lower for candidates who are classified as corrupt based on our methodology. We run the following regression to test this hypothesis:

$$Y_{ijct} = \alpha + \nu_{cj} + \theta_t + \beta_0 * PostalDummy_j + \beta_1 * CorruptDummy_{ict} * PostalDummy_j$$
$$+ \beta_2 * CorruptDummy_{ict} + \beta * X + \epsilon_{ijct}$$

(8)

Here CorruptDummy$_{ict}$ is a dummy that takes the value of 1 if a candidate i contesting election t in constituency c has above median criminal charges as well as above median net assets and zero otherwise. All other variables are same as defined before. The results from running the regression equation (8) are presented in Column 3 of Table 4. We notice that the coefficient of CorruptDummy$_{ict}$ is positive and significant. This indicates that overall support for corrupt candidates is 6.3 times ($= exp(1.994) - 1$) more when compared to other candidates.

The key coefficient of interest, however, is the interaction term $CorruptDummy_{ict} * PostalDummy_j$, which captures the difference-in-difference:

$$\beta_1 = \left(E(Y|\beta X)_{\text{Candidates likely to be corrupt}} - E(Y|\beta X)_{\text{other candidates}} \right)\big|_{\text{Postal Votes}}$$
$$- \left(E(Y|\beta X)_{\text{Candidates likely to be corrupt}} - E(Y|\beta X)_{\text{other candidates}} \right)\big|_{\text{General Votes}} \quad (9)$$

where $E(Y|\beta X)$ is as defined before. We find that the coefficient estimate for β_1 is negative and statistically significant at the 1% level. Economically, when compared to general voters, the difference in educated voters' support for corrupt candidates vis-à-vis other candidates is lower by 34.2% ($= exp(-0.419) - 1$). In Column 4, we include other candidate characteristics and find that the positive correlation between CorruptDummy$_{ict}$ and the number of votes decreases from 6.3 to 1.1. Here again, the coefficient estimate of β_1 is still negative and significant. This shows that, when compared to general voters, the difference in educated voters' support for corrupt candidates vis-à-vis non-corrupt candidates is lower by 20.1% ($= exp(-0.224) - 1$).

It is clear from columns (3) and (4) of table 4 that support for corrupt candidates is lower among educated voters when compared to general voters.

Additionally, when we include candidate fixed effects in Table 5, columns 3-4, we find that the coefficients are the same as before (Table 4, columns 3-4). As pointed out earlier, this indicates that there is no impact of omitted variables on our coefficient estimates.

V.D   Support for Women Candidates

Chattopadhyay and Duflo (2004) find that reservation of village council seats to women leads to increased provision of public goods needed by most women. Beaman, Chattopadhyay, Duflo, Pande, and Topalova (2009) find that women are effective leaders and are less likely to take bribes. In a traditional society such as India, stereotypical beliefs about women's role in society endure. We therefore analyze if educated voters support women candidates more or less than men. In order to test this hypothesis, we run the following regression:

$$Y_{ijct} = \alpha + \nu_{cj} + \theta_t + \beta_0 * PostalDummy_j + \beta_1 * FemaleDummy_{ict} * PostalDummy_j$$
$$+ \beta_2 * FemaleDummy_{ict} + \beta * X + \epsilon_{ijct}$$
$$(10)$$

The dummy FemaleDummy$_{ict}$ takes the value of 1 if the candidate i contesting election t is a woman and 0 if the candidate is a man.

The results from running the regression equation (10) are presented in Column 5 of

Table 4. We notice that the coefficient of FemaleDummy$_{ict}$ is positive and significant. This indicates that overall support for women candidates is 37% ($= exp(0.315)-1$) more when compared to non-corrupt candidates, which is quite surprising for two reasons. First, as mentioned above, in a traditional society such as India stereotypical beliefs about women's role in society are *a priori* more likely than progressive preferences for women's role as leaders. Second, the overall support for women candidates is quite different from the overall support for candidates charged with crime, especially heinous crime, and corrupt candidates.

While the overall support for women candidates represents an interesting, though surprising, finding, the key coefficient of interest is still the interaction term $FemaleDummy_{ict}*PostalDummy_j$, which captures the difference-in-difference:

$$\beta_1 = \left(E(Y|\beta X)_{\text{Female Candidates}} - E(Y|\beta X)_{\text{Male candidates}}\right)|_{\text{Postal Votes}}$$
$$- \left(E(Y|\beta X)_{\text{Female Candidates}} - E(Y|\beta X)_{\text{Male candidates}}\right)|_{\text{General Votes}} \quad (11)$$

where $E(Y|\beta X)$ is as defined before. In Column 5, the coefficient estimate for β_1 is positive and statistically significant at the 1% level. Economically, when compared to general voters, the difference in educated voters' support for female candidates vis-à-vis male candidates is greater by 13.2% ($= exp(0.124)-1$). In Column 6, we include other candidate characteristics and find that the positive correlation between FemaleDummy$_{ict}$ and the number of votes remains unchanged at 37%. Here again in Column 6, the coefficient estimate of β_1 is positive and significant. This shows that, when compared to general voters, the difference in educated voters' support for female candidates vis-à-vis male candidates is greater by 13.2% ($= exp(0.124)-1$).

In Table 5, columns 5-6, we run the same specification including candidate fixed effects. We find no change in the coefficient estimates (compared to Table 4, columns 5-6) and the results are still significant at 10% level.

V.E Difference between the developed and the less developed states

If the institutional hypothesis (Acemoglu and Robinson (2001), Acemoglu, Johnson, Robinson, and Yared (2008)) leads to the above results, then there should be a significant difference in the preferences of educated voters in the developed states vis-à-vis that in the less developed states. As the Raghuram Rajan committee on the development of Indian states[22] highlighted, the less developed states rank significantly lower with respect

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[22]See www.finmin.nic.in/reports/Report_CompDevState.pdf

to many of the socioeconomic indicators when compared to the developed states. In fact, many of these states have socioeconomic indicators comparable to the poorest countries in the world. Because the institutional infrastructure is likely to correlate with socioeconomic development, the institutional hypothesis would predict that the educated voters distaste for candidates with dubious characteristics would be disproportionately in the developed states when compared to the less developed ones. In contrast, if as the information hypothesis (Ferraz and Finan (2008), Chong, De La O, Karlan, and Wantchekon (2010), Banerjee, Kumar, Pande, and Su (2010)) predicts, education increases the information obtained by voters about candidates, the effect of education on voting preferences may not be very different across the less developed and underdeveloped states. To analyze which of the three hypotheses leads to the above results, we classify the Indian states into the developed and the less developed using the development index constructed by the Raghuram Rajan committee; the list of less developed states and developed states is provided in Appendix A.3.

We run the regression equation (1) separately for the developed states and the less developed states. The results are presented in Table 6 for the developed states and in Table 7 for the less developed states. Contrary to the institutional hypothesis, even in the less developed states, educated voters chose candidates almost the same way as educated voters in the developed states. Column 1 of both table 6 and table 7 show that educated voters, both in the developed and the less developed states, show a strong relative disinclination to vote towards candidates charged with heinous criminal charges. When compared to support by general voters, educated voters' support falls by 20.7% ($= exp(-0.232) - 1$) for candidates charged with heinous crime in the developed states whereas the same falls by 19% ($= exp(-0.211) - 1$) in the less developed states.

It is also important to note that heinous crime dummy has a positive and economically as well as statistically significant values in both sets of states, which explains the persistence of such candidates. However, in case of the developed states, introduction of the interaction between postal votes and heinous crimes dummy renders the interaction term between postal votes and the number of criminal cases statistically insignificant, even though the negative sign is retained. In contrast, in case of the less developed states, the interaction between postal votes and number of criminal cases remains statistically significant (even after controlling for the direct as well as the differential impact of heinous crime charges against a candidate). One possible explanation for this could be the nature of the cases, even among non-heinous crimes. It is possible that non-heinous criminal cases lodged against candidates in the less developed states are more severe when compared to the developed states. From table 1, we know that the average number of criminal cases filed per candidate is significantly higher in the less developed states when compared to the developed states. It is quite likely that the even the severity of cases

follows a similar direction.

We next examine if the candidates who are likely to be corrupt are treated any differently by educated voters belonging to the developed states when compared to the less developed states. The results are reported in column 2 of table 6 and table 7. Corrupt candidates receive 23.8% ($= exp(-0.272) - 1$) and 23.2% ($= exp(-0.264) - 1$) less votes from postal voters in the developed and the less developed states respectively when compared to general votes. This effect is economically very large and statistically significant as well. However, as noted before, in general corrupt candidates enjoy high support among general voters in both types of states. The dummy representing corruption is both economically as well as statistically significant in both type of states. Similarly, in column 3 of table 6 and table 7, we report the results of the regression equation (10) separately for the developed and the less developed states. Here we look at the support for women candidates among educated voters when compared to other voters. The differential support for women candidates among educated voters compared to others is 14.1% ($= exp(0.132) - 1$) more in the less developed states and 13.7% ($= exp(0.128) - 1$) more in the developed states. Both the above coefficients are economically as well as statistically highly significant. Thus, both in the developed and the less developed states, female candidates enjoy higher support among educated voters when compared to general voters.

Based on the results presented in tables 6 and 7, we infer that economic development of the region does not seem to have a significant influence on the electoral preferences of educated voters.

V.F Impact of Postal Vote

We have so far shown that postal voters in India exhibit relatively progressive voting preferences when compared to general voters. Such voters show lower tendency to support candidates charged with criminal charges, especially charges related to heinous crimes and candidates who are likely to be corrupt. They also show an increased tendency to support female candidates. However, these findings have significant import only if preferences displayed by postal voters are representative of preferences of educated voters in general. We now examine this premise.

In this context, it is important to note that both postal and general votes are counted simultaneously. Therefore, when exercising their franchise, general voters are unlikely to know the voting preferences of the postal voters. Therefore, it is quite unlikely that the postal voters ape the general voters or vice versa. To examine the correlation between postal voters and educated voters in the general voting population, we exploit the fact

that the proportion of educated voters is higher in the developed states when compared to the less developed states. The Indian Census reports show that as of 2001, literacy rate in the developed states was 80% as compared to 68% in the less developed states. Therefore, we use a dummy for a developed state versus a less developed state to proxy greater proportion of educated voters in the general voting population. We run the following regression:

$$Actual\_prop_{ict} = \alpha + \nu_c + \theta_t + \beta_0 * PostalProp_{ict} + \beta_1 * PostalProp_{ict} * Developed-$$
$$state - dummy + \beta_2 * Developed - state - dummy + \beta * X + \epsilon_{ict}$$

(12)

The results are reported in Table 8. In Column 1, the results are reported without including the constituency fixed effects, whereas in column 2 constituency and election year fixed effects have been included. The dependent variable is the proportion of general votes received by the candidate in a constituency. Our explanatory variable of interest is the interaction between developed state dummy and the proportion of postal votes received by the same candidate. We find that a candidate that secures 1% more of the postal votes secures about 61% more of the general votes; therefore, the correlation between postal votes received by a candidate and the general votes received by the same candidate is quite high. These results are consistent with Bardhan and Mookherjee (2000) and Fair (1978)), where the majority of the electorate displays similar preferences in an election.

Crucially however, we find that a candidate that secures 1% more of the postal votes secures about 6% more of the general votes proportion in the developed states when compared to the less developed states. Thus, the proportion of postal votes secured by a candidate is correlated more strongly with the proportion of general votes received by a candidate when the voting population is more educated. Our results indicate that closer alignment between electoral preferences of postal and general voters in the developed states can be attributed to the presence of a relatively higher proportion of educated voters in the general populations. Thus, the above result also shows that postal votes represent the electoral preferences of educated voters in general.

Next, we examine the contribution of postal votes to the likelihood of a candidate winning the election. We run the following logit regression to estimate the probability of winning given the proportion of postal votes received by the candidate:

$$Y_{ict} = \alpha + \nu_c + \theta_t + \beta_0 * PostalProp_{ict} + \beta_1 * PostalProp_{ict} * Developed-$$
$$state - dummy + \beta_2 * Developed - state - dummy + \beta * X + \epsilon_{ict}$$

(13)

where Y_{ict} represents a dummy that equals 1 if candidate i contesting from constituency c in election t won the election and equals 0 if the candidate lost the election. Columns

4,5 and 6 of table 8 report the the results of running the above regression equation. We find that an increase in the proportion of postal votes by 1% increases the likelihood of the candidate winning by 0.3% in a less developed state and 0.4% in a developed state. The coefficients are statistically significant at 1% level.

To understand the economic implications of an increase in the proportion of postal votes polled on the *overall* likelihood of a candidate winning, consider a hypothetical constituency with 20% of its electorate being educated (i.e. having an education qualification equal to matriculation or better). Consider the votes polled by a candidate with a heinous crime charge against his name who contests from this constituency. Given the findings reported in Table 4, such a candidate is likely to receive 53.1% more votes from general voters and only 7.9% more votes from educated voters. Thus, given the assumed population proportions such a candidate is likely to receive 44% more votes from the entire electorate (= 53.1% * 0.8 + 7.9% * 0.2) . Now, consider another constituency where the proportion of educated voters is 30%. The candidate with a heinous crime charge against his name is likely to receive 39.5% more support from the entire electorate (= 53.1% * 0.7 + 7.9% * 0.3). This implies that a 10% increase in the proportion of educated voters leads to approximately a 4.5% reduction in support for such a candidate. To understand the significance of a 4.5% reduction in votes on the chances of winning of a candidate charged with a heinous crime, we calculate the proportion of such candidates who would have lost the elections if such a reduction had happened. Given that more than two candidates always contest and India follows a "first past the post" system, the counter-factual estimate is bounded by the following two values: (i) On the higher end, if all the votes that shift away from the winning candidate (who is charged with a heinous crime) move to the runner-up, then 58% of such candidates that won the elections would have lost. (ii) On the lower side, if all the votes that shift away from the winning candidate (who is charged with a heinous crime) move to the candidates other than the runner-up, then 35% of such candidates who won the elections would have lost. Thus, a 10% increase in the proportion of educated voters in the voting population would lead to a reduction in the proportion of members of Parliament charged with a heinous crime by anywhere between 35% to 58%.

Thus, our findings that educated voters are likely to vote differently when compared to general voters is likely to have significant import as the proportion of educated voters in a constituency increases. This, we believe, augurs well for the future of democracy in India in particular and the developing world in general.

V.G Robustness

As a robustness test, we measure candidate attributes as deviation from the median level for a particular election. We re-run the regression equation (1) using the median deviation of candidate's characteristics. The results for all the states together are reported in Appendix Table A.3. All the results are in line with the earlier findings.

As a further robustness test, we run regression (1) with proportion of votes as the dependent variable. Because number of voters varies across constituencies and across time, proportion of votes secured by a candidate normalizes the votes secured by the voting population in the constituency in the particular election. We report the results in Table A.4 in Appendix. All our results hold with similar levels of economic and statistical significance as in our main tests.

We also check the assumption that the residuals from the regressions are normally distributed. For this purpose, we plot the normal QQ plots in Figure 1. As shown in the figure, the close overlap of quantiles of residuals with that of a normally distributed random variable confirms that the residuals from regression specifications are indeed normally distributed.

VI Conclusion

This paper raises hopes that even in developing countries with extractive institutions and low levels of development, a higher level of education among the electorate can lead to better choice of democratic representatives. Ours is the first study to base its inferences on actual voting records of a group of voters with a substantially higher level of education than the general population. The findings in this paper challenge the institutional hypothesis, which claims that democratic practices can improve only with institutional development. Unlike existing studies that find weak evidence of the effect of literacy/education on democratic outcomes (Fornos, Power, and Garand (2004), Pande (2011)), our study raises the hope that education and information can improve democratic outcomes even in developing countries.

References

ACEMOGLU, D., S. JOHNSON, J. A. ROBINSON, AND P. YARED (2008): "Income and Democracy," *American Economic Review*, 98(3), 808–842.

ACEMOGLU, D., AND J. A. ROBINSON (2001): "A theory of political transitions," *American Economic Review*, pp. 938–963.

AIDT, T., M. A. GOLDEN, AND D. TIWARI (2011): "Incumbents and Criminals in the Indian National Legislature," *Working Paper, University of Cambridge.*

ARNESON, R. (1993): "Democratic rights at national and workplace levels," *The idea of democracy*, pp. 118–48.

BANERJEE, A., S. KUMAR, R. PANDE, AND F. SU (2010): "Do informed voters make better choices? Experimental evidence from urban India," *Unpublished manuscript. http://www. povertyactionlab. org/node/2764.*

BARDHAN, P., AND D. MOOKHERJEE (2000): "Capture and governance at local and national levels," *American Economic Review*, pp. 135–139.

BEAMAN, L., R. CHATTOPADHYAY, E. DUFLO, R. PANDE, AND P. TOPALOVA (2009): "Powerful women: does exposure reduce bias?," *The Quarterly Journal of Economics*, 124(4), 1497–1540.

BEITZ, C. R. (1989): *Political equality: An essay in democratic theory.* Princeton University Press.

BESLEY, T., R. PANDE, L. RAHMAN, AND V. RAO (2004): "The politics of public good provision: Evidence from Indian local governments," *Journal of the European Economic Association*, 2(2-3), 416–426.

BESLEY, T., R. PANDE, AND V. RAO (2007): "Just rewards? Local politics and public resource allocation in South India," *Working Paper, London School of Economics and Political Science.*

BHAVNANI, R. R. (2009): "Do electoral quotas work after they are withdrawn? Evidence from a natural experiment in India," *American Political Science Review*, 103(1), 23–35.

BLAYDES, L. (2006): "Who votes in authoritarian elections and why? Determinants of voter turnout in contemporary Egypt," in *Annual Meeting of the American Political Science Association. Philadelphia, PA, August.*

BOBONIS, G. J., L. R. C. FUERTES, AND R. SCHWABE (2009): "Does Exposing Corrupt Politicians Reduce Corruption?," *Unpublished manuscript, MIT.*

BRADY, H. E., S. VERBA, AND K. L. SCHLOZMAN (1995): "Beyond SES: A resource model of political participation," *American Political Science Review*, pp. 271–294.

BRATTON, M. (2008): "Vote buying and violence in Nigerian election campaigns," *Electoral studies*, 27(4), 621–632.

CHATTOPADHYAY, R., AND E. DUFLO (2004): "Women as policy makers: Evidence from a randomized policy experiment in India," *Econometrica*, 72(5), 1409–1443.

CHONG, A., A. DE LA O, D. KARLAN, AND L. WANTCHEKON (2010): "Information dissemination and local governments electoral returns, evidence from a field experiment in Mexico," *Unpublished manuscript, Yale University.*

ESTLUND, D. M. (1986): *The theoretical interpretation of voting.* University of Wisconsin–Madison.

FAIR, R. C. (1978): "The Effect of Economic Events on Votes for President," *The Review of Economics and Statistics*, 60(2), 159–173.

FERRAZ, C., AND F. FINAN (2008): "Exposing corrupt politicians: The effects of Brazil's publicly released audits on electoral outcomes," *The Quarterly Journal of Economics*, 123(2), 703–745.

FINAN, F., AND L. SCHECHTER (2012): "Vote-Buying and Reciprocity," *Econometrica*, 80(2), 863–881.

FISMAN, R., F. SCHULZ, AND V. VIG (2014): "Private returns to public office," *Forthcoming, Journal of Political Economy*.

FORNOS, C. A., T. J. POWER, AND J. C. GARAND (2004): "Explaining voter turnout in Latin America, 1980 to 2000," *Comparative Political Studies*, 37(8), 909–940.

GROSSMAN, G. M., AND E. HELPMAN (1996): "Electoral competition and special interest politics," *The Review of Economic Studies*, 63(2), 265–286.

HOLMES, S. (1989): "John Stuart Mill: Fallibilism, Expertise, and the Politics-Science Analogy," .

HUNTINGTON, S. P., J. M. NELSON, ET AL. (1976): *No easy choice: Political participation in developing countries*, vol. 3. Harvard University Press Cambridge.

LERNER, D. (1958): "The passing of traditional society: Modernizing the Middle East.," *New York, NY, US: Free Press. (1958)*.

LIPSET, S. M. (1959): "Democracy and working-class authoritarianism," *American Sociological Review*, pp. 482–501.

MILLIGAN, K., E. MORETTI, AND P. OREOPOULOS (2004): "Does education improve citizenship? Evidence from the United States and the United Kingdom," *Journal of Public Economics*, 88(9), 1667–1695.

OLKEN, B. A. (2007): "Monitoring corruption: Evidence from a field experiment in Indonesia," *Journal of Political Economy*, 115(2), 200–249.

PANDE, R. (2011): "Can informed voters enforce better governance? Experiments in low-income democracies," *Annual Review of Economics*, 3(1), 215–237.

VAISHNAV, M. (2011): "Caste Politics, Credibility and Criminality: Political Selection in India," *Working Paper, South Asia Program, Carnegie Endowment for International Peace*.

WOLFINGER, R. E., S. J. ROSENSTONE, AND R. A. MCINTOSH (1981): "Presidential and congressional voters compared," *American Politics Research*, 9(2), 245–256.

TABLE 1: SUMMARY STATISTICS

This table reports the descriptive statistics for the key variables of interest. The data for the number of votes received by candidates is obtained from the Election commission of India. The data on candidate characteristics is obtained from the Association for Democratic Reforms (ADR) which reports important candidate characteristics such as criminal cases, assets, liabilities and education. Panel A reports the results separately for the 2004 and 2009 Lok Sabha elections. Panel B reports the data across both elections but separately for the developed and the less developed states.

Panel A						
	Lok Sabha 2004			Lok Sabha 2009		
Variable	Obs.	Mean	Std.Dev.	Obs.	Mean	Std.Dev.
Candidate's characteristics						
Age	6478	47.63	12.07	14180	45.98	11.87
Criminal Cases	6478	0.39	2.02	14180	0.37	1.77
Number of years of education	6478	11.88	6.81	14180	11.26	6.37
Movable Assets (in Rs. million)	6478	3	23	14180	8	240
Immovable Assets (in Rs. million)	6478	10	270	14180	11	110
Total Assets (in Rs. million)	6478	13	270	14180	18	270
Liabilities (in Rs. million)	6478	1	12	14180	1	8
NetAssets (in Rs. million)	6478	13	270	14180	18	270
Female dummy	6478	0.07	0.25	14180	0.07	0.25
Heinous crime dummy	6478	0.08	0.27	14180	0.07	0.26
Election data						
No. of general votes per candidate	6478	105986	145714	14180	55289	114426
No. of postal votes per candidate	6478	146	448	14180	61	288

Panel B						
	Developed states			Less developed states		
Variable	Obs.	Mean	Std.Dev.	Obs.	Mean	Std.Dev.
Candidate's characteristics						
Age	12048	46.74	11.83	8610	46.16	12.12
Criminal Cases	12048	0.3	1.34	8610	0.49	2.39
Number of years of education	12048	11.21	6.56	8610	11.8	6.43
Movable Assets (in Rs. million)	12048	9	260	8610	3	19
Immovable Assets (in Rs. million)	12048	13	220	8610	8	100
Total Assets (in Rs. million)	12048	21	340	8610	11	110
Liabilities (in Rs. million)	12048	1	11	8610	1	7
Net Assets (in Rs. million)	12048	20	340	8610	10	100
Female dummy	12048	0.07	0.25	8610	0.07	0.26
Heinous crime dummy	12048	0.06	0.24	8610	0.1	0.3
Election data						
No. of general votes per candidate	12048	73223	137442	8610	68337	111439
No. of postal votes per candidate	12048	127	438	8610	32	135

This table reports the results for the effect of candidate's characteristics on the log of one plus the number of votes received by a candidate in a category (postal or general). The variable "postal dummy" takes the value 1 if the votes correspond to postal voters and zero if the votes correspond to general voters. Each of the specifications includes fixed effects for the (constituency, vote category) pair and the election (2004 or 2009). Standard errors reported in the parentheses are robust to heteroscedasticity and are clustered by constituency. ***, **, * represents statistical significance at the 1%, 5% and 10% levels.

	(1)	(2)	(3)	(4)	(5)
Dependent variable:			log(1 + votes)		
Postal dummy * Number of Criminal Cases	-0.049***	-0.049***			-0.044***
	(0.009)	(0.009)			(0.008)
Postal dummy * Decile of Net Assets			-0.035***	-0.035***	-0.032***
			(0.008)	(0.008)	(0.008)
Number of Criminal Cases	0.164***	0.109***		0.084***	0.106***
	(0.023)	(0.015)		(0.013)	(0.015)
Decile of Net Assets		0.292***	0.375***	0.310***	0.309***
		(0.007)	(0.006)	(0.007)	(0.007)
Education Index		0.107***		0.107***	0.107***
		(0.007)		(0.007)	(0.007)
Candidate's Age		0.017***		0.017***	0.017***
		(0.002)		(0.002)	(0.002)
Observations	20,658	20,658	20,658	20,658	20,658
Adj R-squared	0.824	0.877	0.871	0.878	0.878
(Constituency, vote category) FE	Yes	Yes	Yes	Yes	Yes
Election year FE	Yes	Yes	Yes	Yes	Yes

TABLE 3: EFFECT OF CANDIDATE'S CHARACTERISTICS ON VOTES RECEIVED: PANEL REGRESSIONS INCLUDING FIXED EFFECTS FOR ELECTION YEAR, EACH (CONSTITUENCY, VOTE CATEGORY) PAIR AND CANDIDATES.

This table reports the results for the effect of candidate's characteristics on the log of one plus the number of votes received by a candidate in a category (postal or general). The variable "postal dummy" takes the value 1 if the votes correspond to postal voters and zero if the votes correspond to general voters. Each of the specifications includes fixed effects for candidates, (constituency, vote category) pair and the election (2004 or 2009). Standard errors reported in the parentheses are robust to heteroscedasticity and are clustered by constituency. ***, **, * represents statistical significance at the 1%, 5% and 10% levels.

	(1)	(2)	(3)	(4)	(5)
Dependent variable:			log(1 + votes)		
Postal dummy * Number of Criminal Cases	-0.049***	-0.049***			-0.044***
	(0.012)	(0.012)			(0.011)
Postal dummy * Decile of Net Assets			-0.035***	-0.035***	-0.032***
			(0.011)	(0.011)	(0.011)
Observations	20,658	20,658	20,658	20,658	20,658
Adj R-squared	0.967	0.967	0.967	0.967	0.967
Candidate FE	Yes	Yes	Yes	Yes	Yes
(Constituency, vote category) FE	Yes	Yes	Yes	Yes	Yes
Election year FE	Yes	Yes	Yes	Yes	Yes

TABLE 4: EFFECT OF CANDIDATE'S HEINOUS CRIME RECORD, CORRUPTION AND GENDER ON VOTES RECEIVED: PANEL REGRESSIONS INCLUDING FIXED EFFECTS FOR ELECTION YEAR AND EACH (CONSTITUENCY, VOTE CATEGORY) PAIR.

This table reports the results for the effect of candidate's characteristics such as heinous crime record, likelihood of being corrupt proxied by possession of high assets and high criminal records and gender on the log of one plus the number of votes received by a candidate in a category (postal or general). The variable "postal dummy" takes the value 1 if the votes correspond to postal voters and zero if the votes correspond to general voters. Each of the specifications includes fixed effects for the (constituency, vote category) pair and the election (2004 or 2009). Standard errors reported in the parentheses are robust to heteroscedasticity and are clustered by constituency. ***, **, * represents statistical significance at the 1%, 5% and 10% levels.

	(1)	(2)	(3)	(4)	(5)	(6)
Dependent variable:			log(1 + votes)			
Postal dummy * Heinous Crime dummy	-0.360***	-0.225***		-0.114*		
	(0.057)	(0.060)		(0.066)		
Postal dummy * Corrupt dummy			-0.419***	-0.224***		
			(0.061)	(0.066)		
Postal dummy * Female dummy					0.124**	0.124**
					(0.052)	(0.051)
Postal dummy * Number of Criminal Cases		-0.029***		-0.023***		-0.044***
		(0.008)		(0.008)		(0.008)
Postal dummy * Decile of Net Assets		-0.031***		-0.025***		-0.033***
		(0.008)		(0.008)		(0.008)
Heinous Crime dummy	1.103***	0.418***		0.048		
	(0.085)	(0.081)		(0.084)		
Corrupt dummy			1.994***	0.745***		
			(0.070)	(0.079)		
Female dummy					0.315***	0.313***
					(0.087)	(0.068)
Number of female candidates in a Constituency					-0.091***	-0.051**
					(0.026)	(0.021)
Number of Criminal Cases		0.079***		0.058***		0.107***
		(0.015)		(0.012)		(0.015)
Decile of Net Assets		0.305***		0.285***		0.306***
		(0.007)		(0.007)		(0.007)
Education Index		0.107***		0.107***		0.107***
		(0.007)		(0.007)		(0.007)
Candidate's Age		0.017***		0.017***		0.017***
		(0.002)		(0.002)		(0.002)
Observations	20,658	20,658	20,658	20,658	20,658	20,658
Adj R-squared	0.824	0.878	0.835	0.879	0.822	0.878
(Constituency, vote category) FE	Yes	Yes	Yes	Yes	Yes	Yes
Election year FE	Yes	Yes	Yes	Yes	Yes	Yes

TABLE 5: EFFECT OF CANDIDATE'S HEINOUS CRIME RECORD, CORRUPTION AND GENDER ON VOTES RECEIVED: PANEL REGRESSIONS INCLUDING FIXED EFFECTS FOR ELECTION YEAR, EACH (CONSTITUENCY, VOTE CATEGORY) PAIR AND CANDIDATES.

This table reports the results for the effect of candidate's characteristics such as heinous crime record, likelihood of being corrupt proxied by possession of high assets and high criminal records and gender on the log of one plus the number of votes received by a candidate in a category (postal or general). The variable "postal dummy" takes the value 1 if the votes correspond to postal voters and zero if the votes correspond to general voters. Each of the specifications includes fixed effects for candidates, (constituency, vote category) pair and the election (2004 or 2009). Standard errors reported in the parentheses are robust to heteroscedasticity and are clustered by constituency. ***, **, * represents statistical significance at the 1%, 5% and 10% levels.

	(1)	(2)	(3)	(4)	(5)	(6)
Dependent variable:			log(1 + votes)			
Postal dummy * Heinous Crime dummy	-0.360***	-0.225***		-0.114		
	(0.081)	(0.085)		(0.094)		
Postal dummy * Corrupt dummy			-0.419***	-0.224**		
			(0.086)	(0.094)		
Postal dummy * Female dummy					0.124*	0.124*
					(0.074)	(0.073)
Postal dummy * Number of Criminal Cases		-0.029***		-0.023**		-0.044***
		(0.011)		(0.011)		(0.011)
Postal dummy * Decile of Net Assets		-0.031***		-0.025**		-0.033***
		(0.011)		(0.011)		(0.011)
Observations	20,658	20,658	20,658	20,658	20,658	20,658
Adj R-squared	0.967	0.967	0.967	0.967	0.967	0.967
Candidate FE	Yes	Yes	Yes	Yes	Yes	Yes
(Constituency, vote category) FE	Yes	Yes	Yes	Yes	Yes	Yes
Election year FE	Yes	Yes	Yes	Yes	Yes	Yes

TABLE 6: EFFECT OF EXOGENOUS CHANGES IN CANDIDATE'S CHARACTERISTICS SUCH AS CRIMINAL CASES, HEINOUS CRIME RECORD AND CORRUPTION ON VOTES RECEIVED: IV REGRESSIONS INCLUDING FIXED EFFECTS FOR ELECTION YEAR AND EACH (CONSTITUENCY, VOTE CATEGORY) PAIR.

This table reports the results for the effect of exogenous changes in candidate's characteristics such as criminal cases, heinous crime record and likelihood of being corrupt proxied by possession of high assets and high criminal records on the log of one plus the number of votes received by a candidate in a category (postal or general). The variable "postal dummy" takes the value 1 if the votes correspond to postal voters and zero if the votes correspond to general voters. Each of the specifications includes fixed effects for the (constituency, vote category) pair and the election (2004 or 2009). Standard errors reported in the parentheses are robust to heteroscedasticity and are clustered by constituency. ***, **, * represents statistical significance at the 1%, 5% and 10% levels.

Dependent variable:	(1) Heinous Crime	(2) log(1 + votes)	(3) Crime	(4) log(1 + votes)	(5) Corrupt	(6) log(1 + votes)
Postal dummy * Heinous Crime Dummy		-0.584*** (0.098)				
Postal dummy * Corrupt Dummy						-0.790*** (0.100)
Postal dummy * Crime Dummy				-0.664*** (0.082)		
Bihar Dummy * year = 2009	0.049* (0.028)		0.075** (0.034)		0.071*** (0.027)	
Serious Crime Dummy		1.285*** (0.142)				
Corrupt Dummy						1.950*** (0.113)
Crime Dummy				1.351*** (0.109)		
Postal dummy (treat)		-5.029*** (0.064)		-4.739*** (0.063)		-4.711*** (0.061)
year = 2009	0.006 (0.012)		-0.007 (0.015)		-0.014 (0.013)	
Bihar Dummy	-0.050* (0.027)		-0.283*** (0.102)		-0.226** (0.090)	
Observations	6,042	6,042	6,042	6,042	6,042	6,042
Adj R-squared	0.0166	0.855	0.0173	0.857	0.0135	0.862
(Constituency, vote category) FE	Yes	Yes	Yes	Yes	Yes	Yes
Election year FE	Yes	Yes	Yes	Yes	Yes	Yes

This table reports the results for the effect of candidate's characteristics on the log of one plus the number of votes received by a candidate in a category (postal or general) in the developed states. The variable "postal dummy" takes the value 1 if the votes correspond to postal voters and zero if the votes correspond to general voters. Each of the specifications includes fixed effects for the (constituency, vote category) pair and the election (2004 or 2009). Standard errors reported in the parentheses are robust to heteroscedasticity and are clustered by constituency. ***, **, * represents statistical significance at the 1%, 5% and 10% levels.

	(1)	(2)	(3)
Dependent variable:		log(1 + votes)	
Postal dummy * Heinous Crime dummy	-0.232***		
	(0.077)		
Postal dummy * Corrupt dummy		-0.272***	
		(0.082)	
Postal dummy * Female dummy			0.128*
			(0.067)
Postal dummy * Number of Criminal Cases	-0.005	0.002	-0.024
	(0.016)	(0.015)	(0.015)
Postal dummy * Decile of Net Assets	0.001	0.007	0.001
	(0.010)	(0.010)	(0.010)
Heinous Crime dummy	0.276**		
	(0.126)		
Corrupt dummy		0.908***	
		(0.119)	
Female dummy			0.338***
			(0.087)
Number of female candidates in a Constituency			-0.020
			(0.026)
Number of Criminal Cases	0.120***	0.054*	0.143***
	(0.038)	(0.031)	(0.035)
Decile of Net Assets	0.293***	0.272***	0.292***
	(0.009)	(0.009)	(0.009)
Education Index	0.108***	0.108***	0.108***
	(0.010)	(0.010)	(0.010)
Candidate's Age	0.022***	0.022***	0.022***
	(0.002)	(0.002)	(0.002)
Observations	12,048	12,048	12,048
Adj R-squared	0.858	0.859	0.858
(Constituency, vote category) FE	Yes	Yes	Yes
Election year FE	Yes	Yes	Yes

TABLE 8: EFFECT OF CANDIDATE'S CHARACTERISTICS ON VOTES RECEIVED FOR THE LESS DEVELOPED STATES: PANEL REGRESSIONS INCLUDING FIXED EFFECTS FOR ELECTION YEAR AND EACH (CONSTITUENCY, VOTE CATEGORY) PAIR.

This table reports the results for the effect of candidate's characteristics on the log of one plus the number of votes received by a candidate in a category (postal or general) in the less developed states. The variable "postal dummy" takes the value 1 if the votes correspond to postal voters and zero if the votes correspond to general voters. Each of the specifications includes fixed effects for the (constituency, vote category) pair and the election (2004 or 2009). Standard errors reported in the parentheses are robust to heteroscedasticity and are clustered by constituency. ***, **, * represents statistical significance at the 1%, 5% and 10% levels.

	(1)	(2)	(3)
Dependent variable:	log(1 + votes)		
Postal dummy * Heinous Crime dummy	-0.211**		
	(0.091)		
Postal dummy * Corrupt dummy		-0.264***	
		(0.090)	
Postal dummy * Female dummy			0.132*
			(0.078)
Postal dummy * Number of Criminal Cases	-0.040***	-0.040***	-0.051***
	(0.009)	(0.009)	(0.010)
Postal dummy * Decile of Net Assets	-0.088***	-0.080***	-0.091***
	(0.011)	(0.011)	(0.011)
Heinous Crime dummy	0.511***		
	(0.106)		
Corrupt dummy		0.610***	
		(0.099)	
Female dummy			0.267**
			(0.108)
Number of female candidates in a Constituency			-0.091***
			(0.034)
Number of Criminal Cases	0.060***	0.062***	0.092***
	(0.013)	(0.012)	(0.014)
Decile of Net Assets	0.320***	0.302***	0.323***
	(0.011)	(0.012)	(0.011)
Education Index	0.106***	0.106***	0.107***
	(0.009)	(0.009)	(0.009)
Candidate's Age	0.011***	0.011***	0.011***
	(0.002)	(0.002)	(0.002)
Observations	8,610	8,610	8,610
Adj R-squared	0.905	0.905	0.905
(Constituency, vote category) FE	Yes	Yes	Yes
Election year FE	Yes	Yes	Yes

TABLE 9: IMPACT OF POSTAL VOTES IN PREDICTING ELECTION OUTCOMES

This table reports the results for the impact of the proportion of postal votes received by a candidate along with other candidate's characteristics on election outcomes. In panel A, the dependent variable is the actual proportion of votes received by the candidate. The variable "postal dummy" takes the value 1 if the votes correspond to postal voters and zero if the votes correspond to general voters. Panel B reports the marginal effects of logit regression where the dependent variable is a dummy which equals one if the candidate is a winner in elections and zero otherwise. The independent variables include postal proportion and interactions with developed states dummy and candidate's characteristics. Each of the specifications includes fixed effects for the constituency and the election (2004 or 2009). Standard errors reported in the parentheses are robust to heteroscedasticity and are clustered by constituency. ***, **, * represents statistical significance at the 1%, 5% and 10% levels.

	Panel A			Panel B		
	(1)	(2)	(3)	(4)	(5)	(6)
Dependent variable:	Actual proportion			is winner		
Postal proportion	0.696***	0.671***	0.606***	0.003***	0.003***	0.003***
	(0.011)	(0.012)	(0.013)	(0.0001)	(0.0001)	(0.0001)
Dummy for Developed states * Postal proportion	0.052***	0.062***	0.060***	0.001***	0.001***	0.001***
	(0.013)	(0.015)	(0.015)	(.0001)	(0.0001)	(0.0002)
Criminal Cases			0.321***			0.003***
			(0.069)			(0.0007)
Decile of Net Assets			0.795***			0.015***
			(0.038)			(0.0013)
Candidate's Age			0.027***			0.000
			(0.008)			(0.0002)
Education Index			0.215***			0.004***
			(0.032)			(0.0002)
Developed dummy	-0.890***			-0.030***	0.003	0.014
	(0.134)			(.005)	(0.0380)	(0.0451)
Observations	10,331	10,331	10,329	10,331	10,244	10,242
Adj R-squared /Pseudo R-squared	0.766	0.762	0.784	0.474	0.479	0.513
Election year FE	Yes	Yes	Yes	Yes	Yes	Yes
Constituency FE	No	Yes	Yes	No	Yes	Yes

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Figure 1: QQ plot of the residuals for testing normality assumption of errors
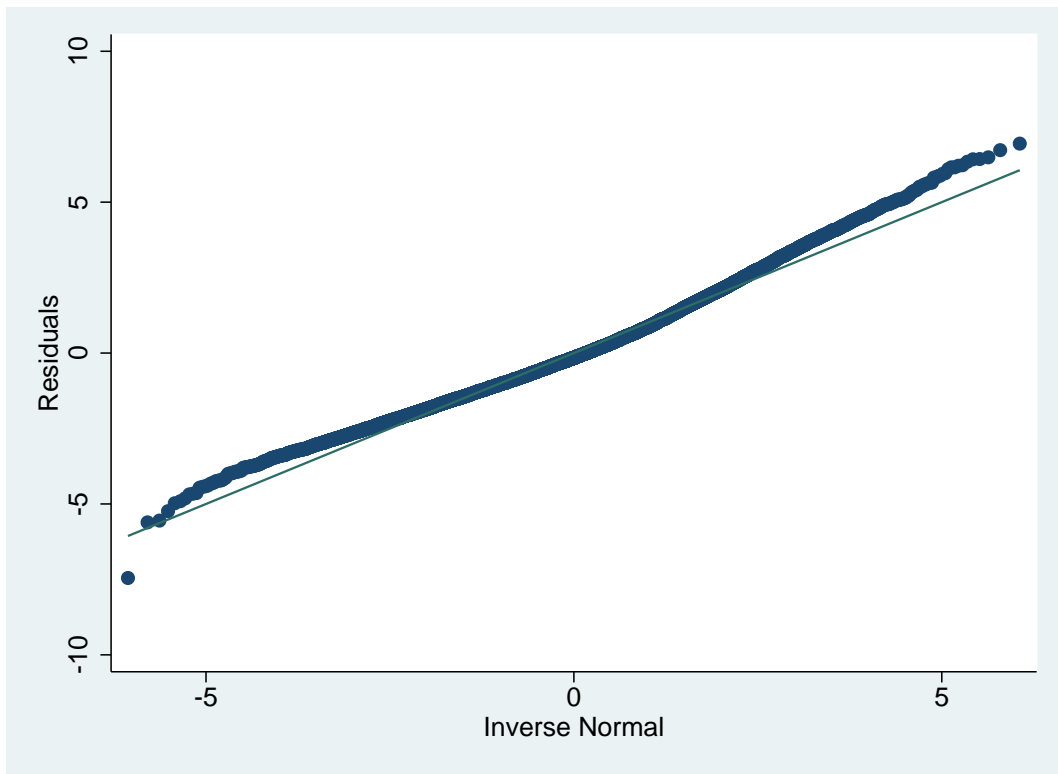
Appendix

Table A.1: EDUCATIONAL QUALIFICATION OF THE CANDIDATES

Education Qualification	EduDummy
Illiterate	0
Literate	1
5th grade	2
8th grade	3
10th grade	4
12th grade	5
Graduate	6
Graduate professional	7
Post graduate	8
Doctorate	9

Table A.2: Classification of Indian states based on development index

Developed States	Less developed States
Andaman and Nicobar Islands	Arunachal Pradesh
Andhra Pradesh	Assam
Chandigarh	Bihar
Dadra and Nagar Haveli	Chhattisgarh
Daman and Diu	Jharkhand
Goa	Madhya Pradesh
Gujarat	Meghalaya
Haryana	Orissa
Himachal Pradesh	Rajasthan
Jammu and Kashmir	Uttar Pradesh
Karnataka	
Kerala	
Lakshadweep	
Maharashtra	
Manipur	
Mizoram	
Nagaland	
NCT Delhi	
Puducherry	
Punjab	
Sikkim	
Tamil Nadu	
Tripura	
Uttarakhand	
West Bengal	

Table A.3: EFFECT OF MEDIAN DEVIATION OF CANDIDATE'S CHARACTERISTICS ON VOTES RECEIVED FOR ALL STATES: PANEL REGRESSIONS INCLUDING FIXED EFFECTS FOR ELECTION YEAR AND EACH (CONSTITUENCY, VOTE CATEGORY) PAIR.

This table reports the results for the effect of median deviation of candidate's characteristics on the log of one plus the number of votes received by a candidate in a category (postal or general). The variable "postal dummy" takes the value 1 if the votes correspond to postal voters and zero if the votes correspond to general voters. Each of the specifications includes fixed effects for the (constituency, vote category) pair and the election (2004 or 2009). Standard errors reported in the parentheses are robust to heteroscedasticity and are clustered by constituency. ***, **, * represents statistical significance at the 1%, 5% and 10% levels.

	(1)	(2)	(3)	(4)	(5)
Dependent variable:			log(1+votes)		
Postal dummy * Median Deviation of criminal cases	-0.047***	-0.047***			-0.044***
	(0.008)	(0.008)			(0.008)
Postal dummy * Median Deviation of decile of Net Assets			-0.027***	-0.027***	-0.025***
			(0.007)	(0.007)	(0.007)
Median Deviation of criminal cases	0.161***	0.110***		0.086***	0.108***
	(0.023)	(0.016)		(0.014)	(0.016)
Median Deviation of decile of Net Assets		0.279***	0.357***	0.293***	0.291***
		(0.007)	(0.006)	(0.007)	(0.007)
Median Deviation of Education index		0.110***		0.110***	0.110***
		(0.007)		(0.007)	(0.007)
Median Deviation of Candidate's age		0.016***		0.016***	0.016***
		(0.001)		(0.001)	(0.001)
Observations	20,658	20,658	20,658	20,658	20,658
Adj R-squared	0.824	0.873	0.866	0.873	0.873
(Constituency, vote category) FE	Yes	Yes	Yes	Yes	Yes
Election year FE	Yes	Yes	Yes	Yes	Yes

Table A.4: Effect of candidate's characteristics on proportion of votes received: Panel regressions including fixed effects for election year and each (constituency, vote category) pair.

This table reports the results for the effect of candidate's characteristics on the proportion of votes received by a candidate in a category (postal or general). The variable "postal dummy" takes the value 1 if the votes correspond to postal voters and zero if the votes correspond to general voters. Each of the specifications includes fixed effects for the (constituency, vote category) pair and the election (2004 or 2009). Standard errors reported in the parentheses are robust to heteroscedasticity and are clustered by constituency. ***, **, * represents statistical significance at the 1%, 5% and 10% levels.

	(1)	(2)	(3)	(4)	(5)
Dependent variable:			Actual proportion		
Postal dummy * Number of Criminal Cases	-0.139*	-0.139*			-0.160**
	(0.077)	(0.077)			(0.078)
Postal dummy * Decile of Net Assets			0.119***	0.119***	0.130***
			(0.027)	(0.027)	(0.028)
Number of Criminal Cases	1.114***	0.637***		0.567***	0.647***
	(0.188)	(0.127)		(0.133)	(0.128)
Decile of Net Assets		2.487***	3.016***	2.427***	2.421***
		(0.071)	(0.061)	(0.068)	(0.068)
Education Index		0.964***		0.964***	0.964***
		(0.069)		(0.069)	(0.069)
Candidate's Age		0.157***		0.157***	0.157***
		(0.016)		(0.016)	(0.016)
Observations	20,658	20,658	20,658	20,658	20,658
Adj R-squared	0.0925	0.304	0.280	0.304	0.304
(Constituency, vote category) FE	Yes	Yes	Yes	Yes	Yes
Election year FE	Yes	Yes	Yes	Yes	Yes