Three Essays on Development and the Political Economy of South Asia

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Submitted in partial fulfillment of the
requirements for the degree
of Doctor of Philosophy
in the Graduate School of Arts and Sciences

COLUMBIA UNIVERSITY

2013

ABSTRACT

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This dissertation consists of three essays on various aspects of development and the political economy of developing countries. The first two chapters share a focus on issues of political economy in South Asia, the first examining the influence of politics over public goods allocations, and the second the effects of ethno-religious politics on voter behavior, violence, and policy outcomes. The third chapter shares with the first two its geographic setting, being located in South Asia, but focuses on education, employing an RCT design to evaluate the efficacy of public-private partnerships in delivering high-quality primary education to remote communities.

The first chapter examines the role of political parties in India's national government in shaping public goods allocations. Party preference is often regarded as important for shaping policy outcomes, but the empirical literature has yielded mixed results, with some research finding substantial party effects, and other research little to none. The discrepancies in estimated party effects are likely due to a combination of heterogeneous party characteristics and institutional context, as well as the the nature of political competition itself, with parties facing a trade-off in the promotion of their most preferred policies against the electoral incentive to cater to the median voter.

To generate random random variation in party identity, I make use of the assassination of the Congress party leader, Rajiv Gandhi, in the midst of India's 1991 national elections, which had the effect of dramatically increasing the probability of Congress victory for a subset of constituencies. Using this variation, I find that representation by the ruling Congress party leads to a substantial increase in the provision of public goods favored by the poor, consistent

with the party's expressed populist agenda. Among the salient changes are increases in the availability of drinking water and declines in infrastructure such as productive electrification and paved roads.

I also estimate party effects using a regression discontinuity identification strategy, which generates variation in party identity for closely contested elections. Here I find little effect of Congress representation on public goods allocations. I argue that the reason for the differences between the results estimated with the two identification strategies is the importance of both the identity of the winning party, as well as the margin of victory.

The second chapter examines the role of ethno-religious propaganda in generating support for political parties espousing ideologies of ethno-religious nationalism. A significant literature has shown the effects of political campaigns and media bias in influencing voter behavior. Ethnic identity often figures prominently in campaigns of voter mobilization, particularly in developing countries, where ethnic identities tend to be more salient, and state resources more subject to capture through power over the state. A large body of research has shown the ways in which, not only does ethnic diversity create an environment conducive to the ethnicization of political competition, but political competition itself contributes to the increased salience of ethnic identity.

Prior to India's 1991 national elections, the leader of the Hindu-nationalist BJP political party toured northern India on a "pilgrimage" to the city of Ayodhya, holding numerous rallies along the way to promote the construction of a Hindu temple there. Causal identification of the campaign's effects comes through the incidental exposure of localities due to their lying along the road joining the cities which were the ultimate destinations of the campaign. The main result is that the campaign increased the BJP's vote share by 5-9 percentage points in visited constituencies, which translated to a 10-20 percentage points increase in the probability of victory.

I also find that the campaign significantly increased the probability of riots, which were 9 percentage points more likely to occur in constituencies through which the campaign passed; and that the riots associated with the campaign increased the party's vote share by 3.5 percentage points. There is also evidence that the campaign increased the availability of local public goods, with the sub-district through which the campaign directly passed showing a 3-6 percentage points increase in a variety of public goods, such as electrification, drinking water, and primary schools.

The third chapter, which is jointly authored with Leigh Linden, Felipe Barrera-Osorio, Dhushyanth Raju, and Matthew Hoover, examines the efficacy of public-private partnerships for delivering high-quality primary education to remote, and underserved, communities. Private entrepreneurs were enlisted to establish and operate primary schools throughout rural Sindh province in Pakistan, for which they were paid a per-child subsidy, with all local children between the ages of 5 and 9 allowed tuition-free enrollment.

To address potential sources of endogeneity, the intervention was designed as a randomized control trial (RCT): 263 villages were identified as qualifying for the program, of which 200 were randomly assigned a school. In addition, half of the treatment villages were assigned a subsidy scheme whereby entrepreneurs were paid slightly more for girls than boys. The program proved remarkably effective, with enrollment increasing by 30-50 percentage points. Child test scores also improved considerably, with children in treatment villages scoring 0.67 standard deviations higher on administered exams. Interestingly, there was no differential effect on female enrollment for either subsidy scheme, which we attribute to the lack of a pre-existing gender gap in enrollment.

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Acknowledgments

This dissertation has benefited from helpful comments and suggestions from Eric Verhoogen, Miguel Urquiola, Cristian Pop-Eleches, Ethan Kaplan, Supreet Kaur, Bentley MacLeod, Pavitra Suryanarayan, and Ram Fishman. I am also grateful for the comments of the seminar participants at Columbia University, the 2012 NEUDC conference, and the 2011 IZA/World Bank conference.

Financial support was provided by the World Bank through Columbia's Institute for Social and Economic Research and Policy (ISERP). This funding was instrumental in facilitating the execution of the Pakistan evaluation, shuttling me multiple times to and from Karachi.

Thanks go to Eric Glass and Jeremiah Trinidad-Christensen of Columbia's Digital Social Science Center, who helped me extensively with the GIS mapping, without which my dissertation would not have been possible. I am also grateful to Mariam Nusrat and Aarij Bashir, who were instrumental in designing and implementing the surveys for the research contained in the third chapter of this dissertation.

I owe special gratitude to my advisors, Suresh Naidu and Leigh Linden. Leigh provided generous mentorship throughout the years, and continued to do so even after his move to UT Austin. He brought me along on his fascinating and important research in Pakistan, and instilled in me a deep love and discerning appreciation for well-executed field work. Suresh was pivotal in helping to shape my scattered, amorphous ideas into coherence. Always generous with his time, his uncanny ability to link my research with the cutting edge of the field was essential.

Finally, I would like to thank my family for all the support they have given me through the years: mothers and fathers, half-sisters and step-sisters, and step-fathers and -mothers

alike, none of this would have been possible without you. My father has been a constant support and inspiration throughout my academic studies, and without him I would not be here. I would especially like to thank my furry companion, Bianca, who sat at my feet through numberless days, reminding me when I forgot and needed it most to get out of the house for a walk.

Dedication

For My Father.

Chapter 1

Politics and Public Goods in Developing Countries: Evidence from India

1.1 Introduction

Democratic institutions are widespread in developing countries, amongst which are some of the largest, including Brazil, India, and Indonesia.[1] As such, political parties have become increasingly important actors in setting policy priorities and establishing the institutional and infrastructural framework for human and economic development. The role played by political parties in shaping policy outcomes, however, is uncertain. A classic model in the political economy literature predicts that where political parties care only about winning, there will be convergence in the policies proposed by competing parties to that preferred by the median voter, so that policy outcomes will be identical regardless of the identity of the winning party (Downs, 1957). Subsequent theoretical work has assumed parties to have preferences over policy outcomes in addition to electoral success, with the result that they will be willing to forego some probability of victory in exchange for a policy platform nearer their optima (Wittman, 1973; Alesina, 1988).

Empirical research has found that the characteristics of the candidates fielded by political parties can have substantial effects on policy outcomes, in line with models emphasizing the role of individual candidate tastes.[2] Chattopadhyay and Duflo (2004), for example, find that the random assignment of women to leadership positions in village-level governing institutions in rural West Bengal and Rajasthan leads to budgetary allocations more closely aligned with the expressed preferences of local women. Pande (2003) finds that political reservations for low caste and tribal groups in state legislatures in India leads to an increase

[1] Huntington (1991) describes the "second" and "third waves" of democratization, the former referring to the emergence of independent, democratic states that occurred with the liberation of erstwhile colonies in the aftermath of World War II, and the latter describing the extension of democracy to 35 countries the 1970s and 1980s, primarily in Latin America and Asia.

[2] Osborne and Slivinski (1996) and Besley and Coate (1997) present "citizen-candidate" models, in which, due to the inability to make policy commitments, candidates implement their most preferred policy upon election.

of public goods targeting these groups. Empirical work on the the effects of political parties themselves, however, has tended to give ambiguous, and sometimes conflicting, results. In the US, Albouy (2009) finds that the party identity of US Congressional representatives shapes local spending priorities;[3] in contrast, Ferreira and Gyourko (2007) find no effect of party identity on policy outcomes in US mayoral elections.[4] A similar ambiguity obtains in developing countries: Bardhan and Mookherjee (2010), for example, find little evidence for Left Front representation leading to an increase in the implementation of land reforms, an issue ostensibly important to the party and its core constituents.[5]

To better understand the role of political parties in shaping policy outcomes, I explore the effects of a random shift in party representation during India's 1991 national elections on local public goods allocations. The 1991 election was conducted over the course of two rounds of voting 3 weeks apart, with approximately half the constituencies voting in each round.[6] Rajiv Gandhi, the leader of the Congress party, was assassinated one day after the first round of voting, unleashing a wave of sympathy support for the Congress party, which substantially increased its vote share and probability of victory in those elections held in the second round. The instrument, therefore, is a dummy variable indicating whether a

[3]Albouy (2009) examines the relationship between party preference, majority status, and government allocations from congressional elections in the US, finding that a state's delegation belonging to the majority party in Congress leads to increases in government expenditures. He also finds that the identity of the representative matters for the composition of government expenditures: Republican representatives are associated with increases in local military and infrastructure spending; while Democrats are associated with increases in housing and urban development, and possibly an increase in education expenditures.

[4]Ferreira and Gyourko (2007), using a regression discontinuity design on mayoral elections, find no effects of party identity on crime rates or the size and composition of government at the city level.

[5]The authors find some evidence for an inverted-U relationship between Left Front influence and land reforms, possibly indicating a "quasi-Downsian" effect, whereby a political moral hazard induces lower policy activism when parties win by larger margins.

[6]The second round of voting in fact occurred across two days, June 12th and 15th. This round of voting was not a run-off election, as would normally be implied by a multi-round format: due to the size of the population and the difficulty of accessing many areas, elections are held across multiple rounds, so that the state's limited resources may be adequately allocated to ensure the integrity of the vote.

constituency held its election before or after the assassination of Rajiv Gandhi. Using this exogenous shift in the probability of Congress victory, I estimate the causal effect of Congress representation on public goods allocations.

The central finding of this paper is that where the Congress party is exogenously assigned representation of a constituency, there are substantial changes in the *composition* of public goods, and one which shows a prioritization of items favored by the poor. Drinking water (tap and handpump) coverage increase, while infrastructure availability declines – electrification (industrial and agricultural) where the politician is a non-incumbent; paved roads and telephone coverage where the representative is an incumbent. Depending on the specification used, there are also increases in government irrigation and primary education in Congress-held constituencies. These changes correspond to a 0.260-0.550 standard deviations increase in public goods classified as "pro-poor" in constituencies represented by Congress. This result is consistent with the party's configuration of support at the time, which was relatively skewed towards low-income and other marginalized groups, and also with the party's espoused populism from the 1970s onwards.

Much of the previous empirical research exploring the role of political parties in developing countries has focused on the effects of parties on the allocation a single public good, seeking to determine whether parties will preferentially target the item towards their own supporters. For example, Miguel and Zaidi (2003) look at the effect of a district's having a parliamentary representative from the ruling party on local education spending in in Ghana. Vaishnav and Sircar (2011) explore the extent to which education spending is directed to constituencies decisive for winning state power in Tamil Nadu ("swing constituencies"), or instead to constituencies strongly supportive of the party ("core constituencies"), the ostensible ostensible *raison d'être* of the party.[7] Bardhan and Mookherjee (2010) give emphasis

[7]These empirical results are explained through an influential class of models exploring the tension between preferential patronage and electoral exigency in settings where parties have durable affiliations with particular

to the ideological aspect of policy interventions, seeking to establish the influence of party ideology on policy outcomes through an analysis of the effect of Left Front party representation on the implementation of land reforms, the latter being a policy associated with the left. In this paper, I identify the policy effects of party ideology through an analysis of the relationship between Congress representation and local changes in the composition of a list of public goods varying widely in the preference accorded them by different classes of society.

This is one of the few papers to use an instrumental variables strategy for identifying the effects of electoral outcomes,[8] with most previous research generating random variation through a regression discontinuity design.[9] While it is widely understood that identification using an RD yields local average treatment effects only within the vicinity of the discontinuity, this qualification may be particularly important in political contexts, where the threshold employed suggests a sort of group indifference across outcomes – whether due to convergence in policy platforms across the rival political factions, or the irrelevance of the electoral outcome to the policy of interest – or where ex post behavior may be adapted based on proximity to the threshold. The use of an IV allows me to test the generalizability

social classes. Cox and McCubbins (1986) have parties targeting benefits towards their "core" constituencies, and levying taxes upon the constituencies of other parties. The reason for this is not party preference, but rather the party's greater contact with, and knowledge of, its core constituents; core-targeting, in this framework, is the more effective and reliable strategy for maximizing vote share, due to the uncertain returns from targeting resources to constituencies less familiar to the party. Dixit and Londregan (1996) embed the Cox and McCubbins result in a model that has core-targeting as only one of two possible outcomes: where neither party enjoys an advantage in the allocation of resources to sub-groups within the population (due, for example, to the rise of the bureaucratic state), it is "swing" voters that will be targeted with government spending, as this is the group most delicately balanced between the two parties, and therefore most amenable to persuasion by patronage.

[8]Other examples include the fore-mentioned Bardhan and Mookherjee (2010), who use national political trends interacted with local incumbency to generate variation in local political outcomes; and Jones and Olken (2005), who use natural deaths to estimate the effects of national leadership on economic growth rates. It should be noted that Jones and Olken (2009) estimate the direct effect of assassinations on institutional and conflict outcomes; the assassination is not used as an instrument, and would not satisfy the exclusion restriction were it used as an instrument for leadership changes.

[9]It should be noted that the RD has an IV interpretation, so that the distinction is more precisely given as that between IVs which identify party effects in the vicinity of the discontinuity (the RD), and IVs identifying party effects for a broader range of election margins.

of estimates obtained through the RD design, and to assess the extent to which electoral pressures for policy moderation may obscure party preferences in closely contested elections. Consistent with these concerns, the results obtained with the RD are generally insignificant and always quite small, in stark contrast to those obtained using the IV. In this respect, my paper resembles the paired papers of DiNardo and Lee (2004) and Lee and Mas (2011) on the effects of unionization on firm outcomes. The first of these papers employed a regression discontinuity design to determine whether unionization led to changes in wages or the probability of firm survival, and found that the results were small and statistically insignificant. Looking instead at the relationship between the margin of loss or victory in a unionization election and the cumulative two-year stock returns to the firm, Lee and Mas (2011) found substantial negative effects of unionization on stock returns when the margin of victory was high, but with little evidence of a discontinuity at the victory threshold. This, the authors suggest, is due to a policy convergence of the union and management, leading to identical policies on either side of the threshold.

To reconcile the conflicting findings of the IV and RD designs, I argue for the importance of the margin of victory in mediating the effects of electoral outcomes. The IV and RD strategies capture LATEs differing across multiple dimensions, the most of conspicuous of which being the competitiveness of the election: while the RD necessarily identifies party effects for closely contested elections, the assassination IV induces variation in electoral outcomes across a wide range of victory margins. A large literature can be cited as to why the margin of victory might be important for determining the influence of parties on policy outcomes. Closely contested constituencies, for example, may be characterized by policy convergence across rival parties due to electoral pressures for policy moderation. Alternatively, elections may have a signaling component, so that the margin of victory communicates the underlying support for the proposed policies, in response to which politicians may alter the policies for the sake of future electoral success, or due to constraints faced in their implementation. In-

sofar as such margin-of-victory effects obtain, the IV design used here will yield local average treatment effects more general than those found with the RD.

The magnitudes of the effects uncovered with the IV are surprisingly large, and indicate a substantial role for party preference and electoral outcomes in the distribution of public goods, independent of local population characteristics. This is consistent with the observation of Banerjee *et al.* (2008), that the social characteristics so often invoked in the political-economy literature can explain only a small amount of the variation in observed public goods provision, and that top-down interventions – British versus French colonialism; the idiosyncrasies of local monarchs; the policies of authoritarian states; the priorities of international development organizations – have also played a large role in determining past and present distributions of public goods.

1.2 Background

1.2.1 Political Context

The 1991 Indian general election represented a watershed in the political and economic history of the nation. A balance of payments crisis had been building since the end of 1990, culminating in July's currency devaluation a mere month after the election. A raft of economic reforms would commence under the stewardship of the incoming Prime Minister, Narasimha Rao, and the Minister of Finance, Manmohan Singh, that would be widely credited for the take-off in economic growth that began around this time. Simultaneously, the rise of a more aggressive brand of communal politics would call into question the secular character, and indeed the very viability, of the state. In this election, the right-wing Hindu-nationalist BJP party would solidify its position as the principal opposition to the once-hegemonic Congress; while caste-based parties continued an ascent that would see them

become major contenders for state and national power in the coming years (Jaffrelot, 1996, 2003). The electorate during this time was becoming increasingly restive, with the advantage enjoyed by incumbent politicians in earlier elections becoming a pronounced disadvantage from the 1991 election onwards (Linden, 2004). All national governments would now be coalitional affairs, with the myriad regional, ideological, and caste-based parties organizing themselves around the rival poles of Congress and the BJP.

The election of 1991 is often described as the competition between *mandal* and *mandir*, synecdoches for two competing aspects of communal politics at this time. *Mandir*, meaning "temple," refers to the controversy over the Babri Masjid mosque in Ayodhya. It was a widely held conviction amongst many Indians, particularly those populating the ranks the Hindu nationalist movement, that the mosque had been built on the site of an important Hindu temple destroyed by Muslim invaders in the 16th century. Having aggressively agitated for the "re-building" of a Hindu temple at this site throughout the 1980s, the BJP launched a highly effective campaign in late-1990 to rally support for this cause, which was widely credited with the success of the party during the 1991 elections.[10]

Equally important to the 1991 election was the decree by the Janata Dal-led governing coalition that the recommendations of the Mandal Commission be implemented, whereby quotas would be established for low caste groups in public employment and university admissions. The constitution had, since 1950, already given such preferences to the marginalized "Scheduled Castes" (SC) and "Scheduled Tribes" (ST), reserving to them jointly 22% of political representation, public employment, and university admissions;[11] the Mandal Com-

[10]The leader of the BJP traveled the country on a "pilgrimage" to the city of Ayodhya, along the way mobilizing party activists and the local population, and attracting national media attention. The campaign had important localized effects, with the party realizing a swing of 8 percentage points in its vote share in constituencies visited, and a significant number of riots occurring along its path (Blakeslee, 2012). These local effects are likely relatively small compared to the national effects widely attributed to the campaign.

[11]See Pande (2003) for an analysis of the effect of political reservations for SCs and STs.

mission recommended that the preferences for employment and university admissions be extended to the "other backwards castes" (OBCs), groups located above the SCs and STs in the social hierarchy, but nonetheless suffering significant social and economic disadvantage.[12] With the announcement in late 1990, there immediately ensued large, and often violent, protests across the country, with dozens of high-caste young people immolating themselves in the streets.

1.2.2 Assassination of Rajiv Gandhi

In the midst of these controversies, the governing coalition was dissolved, and new elections announced for May, 1991, a mere 18 months after the previous election. Elections are run by the Election Commission of India, an independent entity established in 1950 by Article 324 of the Indian Constitution for the express purpose of conducting elections free from political interference. It is a highly regarded institution both within India and amongst international observers (Pastor, 1999). At the time of this study, the Commission was responsible for operating approximately 900,000 polling stations, requiring the employment of some 4.5 million people (Gill, 1998). Due to the logistical difficulties of conducting so vast an operation while still ensuring the integrity of the vote, the Commission divides national elections across multiple rounds of voting, allowing it to multiply the resources deployed for each voter. Figure 1 shows which constituencies voted before and after the assassination.

The first round of voting, on May 20, had gone badly Congress, with the party securing 37% of the vote and winning 26% of the constituencies contested. Campaigning in Tamil Nadu on May 21, Rajiv Gandhi was assassinated by a Tamil militant. Heir to the powerful Gandhi dynasty – grandson to India's first prime-minister and son to anther – his assassination was deeply traumatic to the nation, and had the political effect of unleashing a powerful

[12]It was determined that 27.5% of positions would be allocated to these groups. Though their share of the population exceeds this number, due to the constitutional requirement that no more than 50% of positions may be reserved for marginalized groups, and with 22% already reserved for SCs and STs, 27.5% was the maximum permissible share.

wave of sympathy support for the Congress party, whose appeal has always been intimately bound up with that of the Gandhi family. Moreover, the separatist overtones implied in the act served to discredit much of the electioneering of Congress's opponents, whose campaigns were based on particularist appeals to the interests of caste and religion, against the more secular and universalist ideology of the Congress party.

Due to the assassination, elections were postponed to June 12 and 15. The tone of the campaign shifted decisively during this time against the prevailing polarizations of caste and religion, and the Congress party's fortunes in the second round of voting improved considerably. Figure 2 shows the distribution of the change in the Congress party's vote margin between the 1989 and 1991 elections, disaggregated by whether the constituency held its elections before or after the assassination. As can be seen, the distribution for constituencies voting after the assassination shows a pronounced rightward shift relative to those voting before.

1.2.3 Distribution of Public Goods

After decades of dereliction – first under British colonial rule, and then continuing through the early years of independence – national authorities in the 1970s initiated a significant expansion in public goods as part of a concerted effort to bring development to India's still staggeringly impoverished villages. Increasing electoral competition from the late-1960s onwards, coupled with the political mobilization of the lower orders of the social hierarchy, resulted in a political dispensation sharply incentivizing political elites to pay more than lip-service to the demands of those it had previously neglected (Wilkinson, 2006). Banerjee and Somanathan (2007) describe the details and mechanisms of this transformation, with the close correlation between public goods and socio-economic privilege of 1971 giving way to rapid improvements from 1971 to 1991 for precisely those populations previously neglected by the political elite. Through cross-sectional analysis, the authors show that social

marginalization is negatively correlated with access to public goods in 1971, with districts populated by Muslims, Scheduled Castes, and Scheduled Tribes having lower access to education services, health facilities, drinking water, electricity, and communication facilities.[13] The decades between 1971 and 1991, however, witnessed a radical reversal of these patterns, with previously backwards areas catching up rapidly to the more advanced.[14] These changes were in large part driven by the Congress party's turn towards populist politics in 1971, when the party campaigned on an explicitly pro-poor platform, adopting as its slogan *garibi hatao* ("abolish poverty").

The improvement in public goods availability detailed by Banerjee and Somanathan (2007) from 1971-1991 continue through the period of this study, 1991-2001, and the convergence effects detailed there continue to dominate the patterns of change. Table 1 details the levels of public goods for 1991 and 2001, as measured by the percentage of villages having access to the indicated public good.[15] Among the more notable changes in the availability of public goods are: paved roads increasing from 47% to 62%; telephones from 11% to 44%; middle schools from 25% to 33%; local health sub-centers from 9% to 19%; tap water from 21% to 41%; handpump drinking-water from 58% to 75%; tubewell from 23% to 33%; industrial electrification from 37% to 56%; and irrigated land from 38% to 46%.

[13]Interestingly, land inequality is associated with greater availability of schools, piped water, electricity, phone connectivity, post offices, and paved roads, likely due to the greater political clout of rural elites where inequality was high.

[14]A notable feature of the changes between 1971 and 1991 is the far greater improvement witnessed in Scheduled Caste areas as compared to Scheduled Tribe areas, which the authors argue is due to the success of the Scheduled Castes in mobilizing themselves politically, even to the extent of establishing an independent party, whereas the Schedule Tribes remained dependent on the benefactions of the Congress party.

[15]The list of public goods is larger than that used in Banerjee and Somanathan, as later rounds of the census include a finer disaggregation of the constituent elements of electrification, drinking water, and health facilities.

1.2.4 Class-Based Preferences over Public Goods

The public goods enumerated above vary in their relative importance to different classes of society. Unfortunately, there is no available national survey data on the relative preferences of different economic classes for the public goods in this study; while most items will have a fairly intuitive class character, rigorous empirical measures are lacking. For the purpose of classifying the public goods in our data set, therefore, I cite the observations of Bardhan and Mookherjee (2011), authors deeply familiar with the preferences of different economic classes in rural West Bengal. In the brief sketch given there, the poor are posited as giving greater weight to inferior goods such as "housing, sanitation, drinking water or BPL [Below Poverty Line] cards," as well as public schools; while the wealthy and landed classes have a preference for "roads and irrigation" and agricultural inputs. These observations are intuitive, and likely to be relatively consistent across much of the country. Because the list of public goods in my data set is considerably longer than that described by Bardhan and Mookherjee (2011), I adopt as an alternative classification scheme the following: "pro-poor" - drinking water[16] and primary education; "non pro-poor" - agricultural and industrial electrification, irrigation, telephones, paved roads, health sub-centers, and secondary education.[17] The classification of agricultural electrification, irrigation, and paved roads as "non pro-poor" follows immediately from Bardhan and Mookherejee (2011); the inclusion of industrial electrification, telephones, and secondary education in this category are intuitive extensions of this

[16]Well water is classified as not being a pro-poor item, as it was decreasing steadily between 1971 and 2001; and would be regarded as the traditional, and less preferred, means of securing access to drinking water

[17]There will necessarily be ambiguity with some of these goods. For example, depending on the distribution of land ownership and the functioning of agricultural labor markets, extensions of irrigation could be beneficial to markedly different economic classes. In West Bengal, where tenancy reforms have been relatively successful in extending de facto property rights to previously marginalized tenants, irrigation may in fact have a pro-poor character (Banerjee *et al.*, 2002); whereas in Bihar, with its large class of middling farmers and impoverished agricultural laborers, it is the first of these two classes that will benefit, with the latter deriving little immediate advantage.

classification scheme.[18] In table 2 are itemized the public goods according to these two classification schemes: "pro-poor" indicates that an item has been designated as preferred by the poor, and "non" indicates that the good is not relatively favored by the poor. A number of items have not been classified as falling into either category, due either to their not being goods provided by the government (e.g., various types of private irrigation), or because their levels are relatively small and unchanging (e.g., hospitals and health centers).[19]

The Congress party during these years was the party most closely aligned with the interests of the rural poor and other marginalized groups.[20] Though in the early years of independence representing a broad spectrum of the population in terms of caste, class, region, and religion, with the rise of Indira Gandhi in the late-1960s the party took a significant turn towards populism (Banerjee and Somanathan, 2007; Wilkinson, 2006). The Minimum Needs Program was launched in the mid-1970s to bring public goods to neglected rural areas; while a second wave of land reforms was initiated to enforce earlier reforms that had been in many ways subverted by rural elites. The decades between 1971 and 1991 witnessed the emergence of a diverse array of opposition parties representing the myriad cleavages in Indian society, often forcing the Congress party to reactively adapt its electoral strategy according to the coalitions constructed by local rivals; the national character of the party nonetheless endured, with support continuing to come from a diverse cross-section of the population with

[18]See Banerjee and Duflo (2009) for a discussion of India's government-run health centers, and the reasons why they are unlikely to be highly valued by the poor.

[19]It is important to emphasize that what matters for my purposes is the *relative* preference accorded various public goods. For example, while members of all classes will value primary education, wealthier households will be able (in fact, will prefer) to secure this service through private markets, and so will regard it as of lower priority as compared to low income households. A similar logic applies to drinking water: while wealthier households will also clearly value tap water facilities, because they will generally have hired household help, as well as access to handpumps and other private sources, the inconvenience of having to secure drinking water isn't as onerous as it is for poorer households.

[20]The states of West Bengal and Kerala are exceptions to this characterization, where the Left Front parties were the principal representatives of the lower classes.

an emphasis on the socially disadvantaged (Heath and Yadav, 1999).[21] The Congress party's class character becomes more conspicuous when contrasted with the two principal opposition parties of the time, the Janata Dal and BJP. The Janata Dal[22] was largely the party of the middling agrarian classes, for whom agricultural assistance, rural amenities, and government employment were highly valued. The BJP's base of support generally consisted of the higher castes, and the urban middle and upper classes, groups for whom infrastructure, amenities, and market reforms were the policies most valued. For my analysis, what matters is not the class affiliation of the Congress party in isolation, but rather the character of the party in comparison to that of its principal opponents.

1.2.5 Political Institutions and MP Influence

Given the centrality of state governments in many aspects of rural development, it is unclear that the identity of the central government MP[23] should have important effects on the allocation of local public goods. The 1950 Indian constitution establishes a federal system of governance. In the Seventh Schedule of the constitution are enumerated the responsibilities assigned the central and state governments, and those under joint jurisdiction. All international matters and issues of macroeconomic management are assigned to the central government, as are issues with inter-state implications. To the states are delegated issues such as public health, police and public order, agriculture, water, and land rights. Under joint authority are, among others, contracts, trade unions and labor disputes, forestry, eco-

[21]There existed significant state-level variation in this coalition, even to the extent of the party's being associated primarily with the upper castes and socially advantaged in states where the Left Front parties were ascendent. In addition, it should be noted that the analysis of Heath and Yadav (1999) is based on surveys from 1996 and 1998, so that the trends detailed there would have been only partially realized at the time of the 1991 election.

[22]Many important state-level parties, such as the Rashtriya Janata Dal in Bihar and the Samajwadi party in Uttar Pradesh, have splintered off from the Janata Dal, but continue to have a similar social profile.

[23]"Member of Parliament" – i.e., the constituency representative whose influence over policy I am trying to estimate.

nomic and social planning, education, and electricity (thought this last has been largely taken over by states).[24]

Despite this partitioning of power, the central government has long exercised influence over even those domains ostensibly the sole prerogative of the states. A succession of Five Year Plans, issue by the Planning Commission within the Central government, have established development agendas for State governments to pursue, with funds transferred to the states in pursuance of these objectives.[25] In recent years, more than half of the Central Assistance provided to state governments for rural development schemes comes in the form of Additional Central Assistance (ACA), which specifies the schemes to be financed, and often involves a measure of control by the relevant ministries within the central government (Saxena, 2007). The Centrally Sponsored anti-poverty Schemes and the Centrally Sponsored subsidy and infrastructure Schemes (CSS), initiated in the early 1970s under then prime minister Indira Gandhi, were deliberately designed to allow the central government to bypass the states in the provision of local public goods (Saxena, 2007).

In this setting, MPs are able to shape local public good allocations through their influence within the central government. For example, the fore-mentioned CSSs often explicitly mandate a role for the local MP in determining beneficiaries, which authority is widely and effectively wielded for electoral advantage (Wilkinson, 2006). An even more direct means of MP influence is through the Member of Parliament Local Area Development Scheme (MPLADS): established in 1993, with the ostensible purpose of increasing local political responsiveness, the MPLADS program allocates to each MP an annual grant of 10 million rupees ($250,000) for the purpose of pursuing local development projects (Keefer and

[24]More recently, the 73rd and 74th amendments to the constitution, ratified in 1993, designated the village-level councils, "panchayats", as a third level of governance.

[25]Complicated political economy dynamics, based on party affiliations between center and state, and the size of state delegations in the central government, have played a significant role in shaping transfers to state governments (Rao and Singh, 2001a, 2001b).

Khemani, 2009).[26]

Politicians can also shape policy outcomes through their influence over local bureaucracies and village-level political institutions. One particularly powerful means by which politicians wield influence is through their ability to arrange for the transfer of civil servants to undesirable posts. Banik (2001) quotes a senior official as saying "large scale transfers are to place in position those who will unquestioningly obey their political mentors;" and a civil servant explaining that "transfer is such a potent instrument that it can make or break an official." The author describes the effects of this system on policy: "officers considered to be loyal to the ruling party are expected to focus resources on programmes preferred by the ruling party in specific areas and for pre-determined sets of beneficiaries."[27] MPs and MLAs are also responsible for nominating members to the Block Development committees, administrative units below the district level that play a significant role in determining the development needs of the block (Wilkinson, 2006); and can also exercise influence through the village councils that have become increasingly influential in shaping and implementing local policy (Singh *et al.*, 2003).

Through mechanisms such as these, elected officials play a substantial role in shaping the allocation of local pubic goods. Wilkinson (2006) estimated that MPs and MLAs played a significant role in determining the beneficiaries for projects accounting for 75% of the rural development budget in Tamil Nadu. Nayak *et al.* (2002) explain that the influence of the Central government and individual MPs over local expenditures was increasing during the

[26]However, this could have made only a small contribution to the findings, as the sums involved were relatively small, and an average of only 36% of the available funds were spent in the first six years of the program.

[27]Wilkinson (2004) and Bayley (1983) describe the functioning of this system in the context of the politicization of the police force, with "punishment posts" created for the purpose of the punitive transfer of officers resisting political interference. Wade (1982) details the workings of the canal irrigation bureaucracy in south India, showing how the procurement of coveted engineering posts requires payments to the Minister of Irrigation and the local MLA, with the government officials wielding power through their control over transfers within the bureaucracy.

years of this study:

> "... over the last decade, the Centre has had to bow to pressure from MPs and MLAs to extend schemes, increase budgets, change cost sharing ratios and channel resources to particular constituencies. The Centre meanwhile has expanded its own role by providing funding for sectors that used to be in the State purview such as pensions and basic minimum services."

1.3 Models and Mechanisms

The identification problem is likely to be considerable in estimating the effect of party identity on public goods provision. For example, if constituencies more supportive of the Congress party for reasons independent of policy commitments are offered less reward for their support, or feature a local leadership less active on behalf of constituents (Keefer and Khemani, 2009), then this will bias the estimated effect of Congress victory towards zero. Ideally, one would like to compare pairs of identical constituencies, randomly shifting the victory status of one member of each pair while leaving unobservables such as local platform and candidate characteristics untouched. While fixed effects methods might resolve some of the endogeneity problems, they would fail to account for time-inconstant unobservables, which will loom large in electoral settings.

Given these challenges, a popular solution in the literature has been the use of an RD identification strategy, which is particularly attractive given the sharp discontinuities in party representation generated by election margins. The RD design was first used in a political setting by Lee (2001), who estimated the advantage to incumbent candidates in US congressional elections, finding that incumbent congressional candidates are 40 ppts more likely to win the following election than non-incumbents. Subsequent research has

employed RD designs for the estimation of electoral effects across a variety of outcomes: incumbency effects (Lee, 2001; Linden, 2004); drug trafficking and violence (Dell, 2012); education expenditures (Miguel and Zaidi, 2003); and the effects of unionization (DiNardo and Lee, 2004). Lee *et al.* (2004) use an RD not only to determine effects of party identity on roll call voting, but also to argue for a lack of policy convergence to the preferences of the median voter.

Regression discontinuity designs will necessarily identify the effects of electoral outcomes in the vicinity of the discontinuity, meaning that one must be cautious in the interpretations of the results obtained. For example, the extant literature typically models political parties as balancing the desire to promote their preferred policy outcomes against the necessity for policy moderation in pursuit of electoral success. Within this framework, closely contested elections will tend also to be those in which the parties have converged in their proposed platforms to that preferred by the median voter. Where such a dynamic obtains, RDs are likely to yield insignificant results.[28] In other models, however, the margin of victory may be less important, so that results obtained through an RD design have an interpretation generalizable away from the discontinuity. Citizen-candidate models tend to possess this character, with politicians unable to credibly commit to any policy other than that most personally preferred, so that all that matters for determining policy effects is the identity of the victorious candidate (Osborne and Slivinski, 1996; Besley and Coate, 1997).[29]

1.3.1 Modeling Electoral Effects

My principal interest in this paper is to identify the average treatment effect (ATE) for

[28]Ferreira and Gyourko (2007) and Lee and Mas (2011) explicitly cite such a mechanism as driving the null results they obtain using the RD design.

[29]Lee *et al.* (2004), for example, find little evidence of policy convergence in US Congressional races: winners of narrowly contested elections are just as likely to vote along partisan lines as those winning by larger margins.

a change in party identity. Due to the potential for policy convergence in closely contested elections, the ability to do so through various identification strategies will be constrained according to the political model invoked. To frame the issues involved, I first present a simple model for the effects of party on policy outcomes:

$$y_i = \alpha + \beta PartyA_i + \varepsilon_i,$$

where $PartyA_i$ is a dummy variable indicating a constituency's being represented by party A rather than party B in a two-party model. In such settings, RDs can be employed to address the likely correlation of party with the error term, with flexible functions of the vote margin enabling causal identification of the local average treatment effect (LATE) of victory at the win/loss discontinuity. Where treatment effects are constant, the LATE identified by the RD will be identical to the ATE, allowing one to estimate party effects through an RD design.

Let us assume, however, that the effect of party also depends on the margin of victory:

$$y_i = \alpha + \beta_i PartyA_i + \varepsilon_i,$$

with $\beta_i = \beta(margin_i)$, so that the heterogeneity of the treatment effect is driven by its dependence on the margin of victory. The average treatment effect, β, is given by

$$\beta = \int \beta(margin) dB(margin).$$

The use of an RD identification strategy will now yield

$$\beta_{RD} = y^+ - y^- = \lim_{margin \downarrow 0} \beta(margin) + \varepsilon - \lim_{margin \uparrow 0} + \varepsilon = \beta(0) \lesseqgtr \beta,$$

assuming ε continuous at the discontinuity (Hahn *et al.*, 2001; Imbens, Lemieux, 2008). In this setting, the RD will yield results of uncertain applicability to the universe of election outcomes. For example, if one invokes a model in which the implementation of the party's preferred policy is constrained by the need to appeal to the median voter, and if this constraint is characterized by a functional form having as a condition that $\lim_{marg \downarrow 0} \beta(margin) = 0$, then the regression discontinuity design will yield a null result even where party effects are substantial for larger vote margins.

Given these potential problems with estimation of treatment effects at the 0 margin, identification of a broader range of party effects would be assisted by a source of exogenous variation in electoral outcomes accompanied by greater variation in election margins. In other words, I would like an instrument, z_i, satisfying the normal conditions that $Cov(PartyA_i, z_i) \neq 0$ and $E(z_i \varepsilon_i) = 0$, without the restriction that $margin_i \approx 0$. I will subsequently show that the assassination instrument employed in this paper satisfies these requirements, allowing us to capture party effects even for elections that are not closely contested.

1.3.2 Policy Convergence and Signaling Models

In the previous discussion, I have extensively invoked models of electoral competition featuring a trade-off between optimal policy and electoral success. This class of models traces its genesis to the seminal work of Downs (1957),[30] in which political parties are driven inexorably towards median-voter convergence due to their concern only with winning, also known as the "Median Voter Theorem."[31] Subsequent models relax the assumption of politi-

[30] In fact, Hotelling (1929), who introduced the spatial model of competition, alluded to political competition as a possible application.

[31] The intuition for this result is that where politicians care only about winning, the competitive pressures of capturing the largest vote share will lead ineluctably to convergence on the preferred policy of the median voter, with any other strategy being subject to exploitation by a rival's locating his policy platform between the deviating policy and that preferred by the median voter.

cians' caring only about victory, with the result of their making more realistic predictions of incomplete policy convergence (Wittman, 1973; Alesina, 1988; Besley and Case, 1997). Within this framework, closely contested elections may be taken as evidence for some degree of policy convergence, and elections determined by a larger margin as evidence for the lack of such convergence.

A somewhat distinct literature, however, can also be invoked to understand the relationship between electoral margins and policy outcomes – namely, the literature on signaling function of elections.[32] Piketty (2000) models elections as including a signaling component, whereby voters communicate their preferences to one another in order to better coordinate optimal policy in future elections (with the extensions that such signaling can also influence future party policies). Meirowitz and Tucker (2005) present a model in which voters use relatively less important elections to send messages to candidates in subsequent, more important elections, forcing candidates in the latter to invest in "valence accumulation" through costly campaigning activities.[33] Razin (2003) presents a model in which the voters receive a signal about the state of the world, which implies an optimal policy response, and cast their vote in part to reflect the information gleaned from that signal. Insofar as candidates are policy-responsive, and would like their policy to match the true state of the world, this will lead to post-election adaptation of policy in light of the signal received through the vote share. Shotts (2006) presents a two-period model, in which period-one voting behaviors affect politicians' beliefs about voter preferences, and thereby influence period-two policies and electoral outcomes. In non-democratic systems, too, elections can have an important signaling function. Egorov and Sonin (2011) have dictatorships holding elections for the

[32]I limit the discussion to those models directly relevant to my analysis, while noting the broad scope of the electoral signaling literature, with electoral outcomes and candidate behavior communicate a wide variety or relevant information to voters and candidates (e.g., Roumanias, 2005; Kartik and McAfee, 2007).

[33]The authors state that a similar intuition would hold for a spatial approach, with adaptation along the policy margin.

purpose of signaling to the population the underlying popular support of the party, in order to forestall popular uprisings that might occur were individuals aware of others' similarly aligned preferences. In Miller (2010) "electoral authoritarian" regimes hold elections in order to better determine the general level of support for the regime, and to identify which voters must be mollified with patronage and which with more substantial policy concessions.

1.4 Data

The unit of observation in this study is the parliamentary constituency. The data for Indian elections comes from the Election Commission of India[34] and covers all national-level elections since independence. Among the variables included are candidate names and gender, party identity, turnout, and votes. A perennial challenge in studies on Indian political economy is the matching of political and administrative data: though census districts and parliamentary constituencies are of similar size, and often substantially overlap, there are enough mis-alignments as to render a one-to-one matching infeasible. Moreover, with the partitioning of administrative districts, the rate of which has increased in recent years, the mis-matches become even more problematic in the second period of the study.

To solve this dilemma, I make use a finer disaggregation of the census data than has been used in previous studies, which generally resort to the district-level aggregation. The census data is collected at the village level, of which there are more than 500,000. Though it introduces some error into the administrative-political matching, I make use of the sub-district[35] aggregation, which is necessary for two reason: First, the socio-demographic and public goods data are stored in separate files, meaning they must be matched using the codes provided. However, the village codes in the two files are sometimes unreliable, and

[34]I am grateful to Leigh Linden for allowing me to use his digitized election data.

[35]These are the "taluks" and "tehsils," which are located between the district and village in the administrative apparatus.

generate a large number of mis-matched observations. The sub-district coding, in contrast, is far more reliable, and allows for highly precise matching. Second, my research design requires the matching of the 1991 and 2001 census data. For this, I use the names of the sub-districts, which are relatively consistent across the two years. Matching the village-level data using this procedure, however, would have been impractical due to inconsistencies in the recording of names.

The matching of the administrative and political data is achieved through the use of ArcGIS. Shapefiles[36] for parliamentary constituencies are provided by the Electoral Commission of India; and the 2001 census data includes shapefiles at the village, sub-district, and district levels. The sub-district boundaries, however, are imperfectly nested within the parliamentary constituencies. To match the two, I identify the geographic center (centroid) of each sub-district, and assign the sub-district to the parliamentary constituency within the boundaries of which its centroid falls. Figure 3 demonstrates how this is accomplished: each point is the centroid of a sub-district, and the boundaries give the delineation of a political constituency.

For a few variables – in particular, those on the ethnic composition of constituencies, and geographic and institutional details – data is reported only at the district level.[37] For these, I employ a slightly different matching strategy. Again using ArcGIS, I now impute to each constituency the mean value of the relevant variable of all districts falling across its boundaries, weighted by the percentage of the constituency composed of each district.

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[36]Shapefiles store locational vector coordinates for geographic features, as well as associated tables containing the attributes of those features.

[37]Because of the political sensitivities surrounding caste and religion, the census gives only limited information on these matters. The 1931 Census was the last that included a detailed information on caste. While information on the numbers of Muslims has continued to be released, the numbers given are only at the district level.

1.5 Results

1.5.1 Assassination Instrument

Formally, I model the victory of the Congress party as a linear function of whether the constituency holds its elections before or after the assassination:

$$\begin{aligned} Cong_i &= \alpha + \beta Assn_i \\ &\quad + \vartheta \mathbf{X}_i + \pi \mathbf{E}_i + f(Marg_{1989,i}) + \sigma_i + \varepsilon_i, \end{aligned} \tag{1.1}$$

where $Cong_i$ is a dummy taking a value of 1 where a member of the Congress party represents constituency i, and $Assn_i$ is a dummy taking a value of 1 where the constituency holds its elections after the assassination. $\mathbf{X_i}$ is a vector of constituency characteristics, which includes the urbanization rate, the average population per village, and the number of villages; and $\mathbf{E}_i$ a vector of electoral characteristics, including dummies for constituencies in which there were seat-sharing arrangements between opposition parties, SC/ST-reserved constituencies, and the party's incumbency status. I also allow for a flexible function of the prior election margin, $f(Marg_{1989,i})$, specified as a cubic in the Congress party's 1989 vote margin. State fixed effects are included, σ_i, and the error terms, ε_i, are iid.

As an alternative, I also specify the first stage as including an interaction of the assassination with the party's absolute margin of victory in the 1989 election:

$$\begin{aligned} Cong_i &= \alpha + \beta_1 Assn_i + \beta_2 (Assn_i \times AbsMarg_i) + \beta_3 AbsMarg_i \\ &\quad + \vartheta \mathbf{X}_i + \pi \mathbf{E}_i + f(Marg_{1989,i}) + \sigma_i + \varepsilon_i. \end{aligned} \tag{1.2}$$

The latter specification is justified by the likely dependence of the effect of the assassination on the prior competitiveness of the constituency. If one models the direct effect of the assassination to have been a constant increase in vote share for all constituencies, and assuming

some level of vote stability across elections, then failing to account for the party's prior level of support will reduce the first-stage precision, as is subsequently shown.

Because there will certainly be heterogeneity in potential outcomes, it will be necessary not only that the instrument satisfy the two conditions that $Cov(Cong_i, Assn_i) \neq 0$ and $E(Assn_i\varepsilon_i) = 0$ (the latter conflating the exclusion restriction and the independence assumption), but also that there be *monotonicity* in the effect of the instrument on the explanatory variable (Angrist and Pischke, 2008). In this case, the requirement means that, with random coefficients in model (1), $\beta_i \geq 0$ for all i. This assumption is justified by accounts at the time, which describe the assassination as having had either a positive or null effect on the election (Kumer, 1991). In results not shown, I find that the effect of the assassination is positive or null across the most relevant aspects of political and socio-economic heterogeneity.

1.5.2 Treatment Balance

The most significant challenge to the identification strategy is that the assassination instrument may be correlated with the second stage error term, whether due to a failure of the exclusion restriction or a correlation of the instrument with potential outcomes (Angrist and Imbens, 1994). As argued below, the exclusion restriction will be satisfied; nevertheless, for the instrument to be valid, it will still need to satisfy the independence assumption – i.e., that it be "as good as randomly assigned" (Angrist and Pischke, 2008) – meaning that instrument cannot be correlated with unobservable constituency characteristics in the second stage error term.[38]

Of the 449 constituencies in my sample, 206 voted before the assassination, and 243 after.

[38] As discussed in Angrist and Pischke (2008), the condition that the instrument not be correlated with the error term subsumes two different requirements: (1) that the instrument only affects the outcome of interest through the endogenous regressor; and (2) that the instrument is not correlated with potential outcomes.

Table 3 compares the constituencies across a variety of economic and social characteristics. Column (3) compares the means excluding all controls, column (4) includes state fixed effects, and (5) adds a control for the urbanization rate. When state fixed effects are not included, there are substantial differences across the samples, which is unsurprising given that 10 of the 15 states voted entirely before or after the assassination.[39] The inclusion of state fixed effects, however, largely removes these differences. In column (4), we see that there is essentially no difference in the professional distribution of the labor force, save for a 1.8 ppts larger share of the population being cultivators, and a 0.4 ppts smaller share being involved in construction. Support for Congress is indistinguishable across the samples. The only remaining differences are that constituencies voting after the assassination have a 1.2 ppts smaller share of the population being brahmins (significant at the 1% level), an ethnic fractionalization rate 3.1 ppts higher (significant at the 10% level), a slightly less steep topography (0.1), and a 9.6 ppts larger share of land having had the landlord-based tenurial system (*zamindar*) under British rule (Banerjee and Iyer, 2005). The inclusion of an urbanization control removes the significance of the difference in construction employment, and reduces the magnitude and significance of the difference in cultivators; the differences according to ethnic fractionalization, brahmins, steepness, and landlord-tenure, however, remain. Given the smallness of these differences, however, and the small magnitude of the correlations of these variables with public goods reported in Banerjee and Somanathan (2007), they are unlikely to have had any sizable effect on the results. In alternative specifications, these variables are included as controls, and are not found to significantly alter the results.

It should be emphasized that the inclusion of state fixed effects is basically sufficient for establishing sample balance. This is important, because I am arguing that the instrument is essentially randomly assigned, which would be less plausible if an elaborate set of controls

[39]The 5 states holding elections both before and after the assassination accounted for approximately 50% of the entire sample.

were required for achieving sample balance. The sample being essentially balanced across the instrument with the inclusion of these minimal controls, it is likely that it will be balanced on unobservables as well.

1.5.3 First-Stage Regressions

Figure 4 shows the Congress party's 1991 vote margin plotted against its 1989 vote margin for constituencies voting before and after the assassination. As can be seen, there is a significant upwards shift in vote margins across the 1989 distribution. The shift in vote margins translates to a substantial change in the probability of victory, as seen in figure 5, which plots the probability of victory in 1991 against the 1989 vote share, disaggregated by the assassination status. The effect appears to be largest for constituencies in which the party had previously either lost by a margin of less than 10, or won by a margin of less than 20, consistent with the prediction motivating the use of model (2) in the first stage regression.

Table 4 shows the first stage results. Columns (1)-(6), panel A, give the uninteracted effect of the assassination on three electoral outcomes: vote share, margin of victory, and probability of victory. The control variables are as described above. The results are presented in alternating columns with and without state fixed effects. Model (1) gives the following results: The assassination yields an increase of 7.381 percentage points in Congress vote share without state fixed effects, and 6.118 ppts with the inclusion of state fixed effects, both significant at the 1% level. Congress's election margin increases by 10.148 and 8.404 ppts, with and without state fixed effects, again significant at the 1% level. Finally, the probability of victory increases by 25.6 and 23.3 ppts for the two respectively, significant at the 1% level. Panel B shows the results from model (2), where the assassination variable is interacted with the absolute margin of the election margin for the Congress party in the prior election. The Congress party received an increased vote share of 7.044 and 5.349 ppts, with

and without state fixed effects, and the election margin increases by 8.162 and 7.138, with all coefficients significant at the 1% level. Consistent with the logic of the assassination's having a larger effect on the probability of Congress victory where the election had previously been closely contested, the coefficients on the uninteracted assassination variable are 35.5 and 32.6 ppts, significant at the 1% level, with the effect declining in the absolute value of the Congress party's previous vote margin. It must be emphasized, however, that it is not just closely contested elections that are being swung by the assassination: as was seen in figure 5, the change in the probability of victory occurs across a broad range of the 1989 vote margin distribution.

The F-statistics in the first-stage regressions are reassuringly large. For model (1), the F-stat for the three electoral outcomes (vote share, vote margin, probability of victory) are 37.951, 28.622, and 26.231, respectively, when including state fixed effects. Incorporating the interaction of assassination with the absolute value of the prior vote margin, the F-stats are 17.133, 9.828, and 24.686 across the three electoral outcomes. As is readily apparent, the F-stats for the victory outcome easily satisfy the weak instruments test (Stock and Yogo, 2005).

The identifying assumption is that the assassination affected the outcome variable only through the change generated in the identity of the party representing the constituency, with the additional requirement that it was not correlated with potential outcomes. The principal effect of the assassination, I posit, was a general short-term boost in support for the Congress party across all constituencies, which necessarily shifted the likelihood of Congress victory for only that sub-set of constituencies voting after the event. We have already seen that the two samples are largely identical in their baseline characteristics, so that the independence assumption has arguably been satisfied. Figure 6 shows the probability of victory for all four elections between 1991 and 1999 plotted against the 1989 vote margin. There is no evidence for enduring effects of the assassination beyond the 1991 election. Voter sympathies, it

seems, were similarly affected across constituencies; the only difference is the effect on the 1991 electoral outcome due to the sequence of voting. This evidence is far from conclusive, as it conflates popular sentiments due to the assassination with incumbency effects in places won due to the assassination, but I take it as supportive of the contention that the effect was largely ephemeral, and had no differential long-term consequences across pre- and post-assassination constituencies; and that, therefore, the exclusion restriction is satisfied.[40]

1.5.4 IV Results

Specifications

Having established the validity of the instrument, I now turn to the central result of the paper. To identify party effects, one would need to disentangle the effects of majority status from party identity (Albouy, 2009) by estimating an equation of the form $y_i = \gamma Majority_i + \rho PartyA_i + \varepsilon_i$ in a two-party model. However, because the setting includes the results of only a single election, majority status and party identity will be entirely collinear, thereby preventing the independent identification of the two. I justify the preferred interpretation through narrative reasoning, acknowledging the possibility that the results identify a generic ruling-party effect.

During the ten year span covered in this study, there were four national elections, in 1991, 1996, 1998, and 1999. The 1996 and 1998 elections led to brief, minority governments, while the 1999 election occurred a year before the commencement of the 2001 census, and so would have presumably had little effect on the outcomes of interest. The public goods data is available for the 1991 and 2001 censuses, which are collected primarily during 1990

[40]In addition, I would note the absence of any intuitive reason as to why the assassination should have differentially affected pre- and post-assassination constituencies aside from its effect on the electoral outcome, as it was one of the more important events in post-independence Indian history, and widely experienced as a national tragedy.

and 2000. Given these characteristics of the data, and given the instrument's validity for only the 1991 election, I adopt as the baseline model a cross-sectional regression of the 2001 level of public goods on political outcomes in the 1991 national election, controlling the 1991 baseline levels of public goods. Because the 1991 election determined political representation for only five of the ten years in question, the results should be taken as a lower bound on the influence of Congress representation on public goods allocations during this time.[41]

Two principal specifications are estimated in this paper. In the first, patterned after the model employed in Chattopadhyay and Duflo (2004), I estimate the regression:

$$\begin{aligned} PG2001norm_{g,i} &= \alpha + \rho Cong_i + \psi(Cong_i \times ProPoor_{g,i}) \\ &\quad + \gamma PG1991norm_{g,i} + \vartheta \mathbf{X}_i + \pi \mathbf{E_i} + f(Marg_{1989,i}) + PG_g + \sigma_i + \varepsilon_{g,i}, \end{aligned} \tag{1.3}$$

where $PGyearnorm_{g,i} \equiv (PGyear_{g,i} - mean(PGyear_{g,pre}))/sd(PGyear_{g,pre})$. In words, the public goods are normalized so as to allow their inclusion in a single regression: the percentage of villages in constituency i possessing public good g is demeaned by the mean for all constituencies voting before the assassination and divided by the standard deviation. The right-hand variables of interest are $Cong_i$, a dummy indicating whether the constituency was won by the Congress party in 1991; and the interaction of this variables with a dummy indicating a good's being classified as "pro-poor," $ProPoor_g$. In addition, dummies are included for each public good, PG_g, in order to capture good-specific changes over time. The other control variables are as described for the first-stage specifications; and the error terms, $\varepsilon_{g,i}$, are clustered at the constituency level. This specification allows us to capture the effect of Congress coming to power on public goods allocations according to their class characteristics. Unfortunately, there is no measure of the intensity of preference, so the results given

[41] Due to incumbency advantages enjoyed in constituencies won due to the assassination, it is likely that the policy effects from the shock to party representation during the 1991 election will have continued through the 1996-1998 term as well, though in a weakened form.

by these specifications are necessarily coarse.

In the second specification, I run separate regressions for each public good:

$$PG2001_i = \alpha + \rho Cong_i + \gamma PG1991_{,i} + \vartheta \mathbf{X}_i + \pi \mathbf{E_i} + f(Marg_{1989,i}) + \sigma_i + \varepsilon_i. \qquad (1.4)$$

The outcome variable is the percentage of villages possessing the specified public good in constituency i in 2001. Controls are included for the baseline level of the public good, $PG_{1991,i}$. The error terms, ε_i, are now iid. The public goods included in the regression include those detailed in table 1: education, drinking water, health facilities, electrification, post and telegraph facilities, telephone availability, paved roads, and various types of irrigation. This specification allows a finer disaggregation of the results of the Congress party's coming to power.

Pro-Poor Public Goods

I first estimate model (3), in which public goods are classified according to their class character. ρ gives us the effect on Congress representation on the change in non-pro-poor public good. The principal coefficient of interest will be ψ, which gives the differential effect of Congress party representation on the provision of pro-poor public goods. In table 2 are shown the two different classification schemes for public goods, the first based on the enumeration given by Bardhan and Mookherjee (2011), and the second adjusting this scheme according to intuitive reasoning and the more extensive list of public goods provided in the census. The only differences are that the alternative list includes telephones, industrial electrification, and health sub-centers, which are all classified as "non pro-poor," and that education is disaggregated into primary, middle, and high school, with only the first classified as "pro-poor." Estimates using both classification schemes are included in the tables.

Table 5 gives the results from these regressions. Columns (1)-(3) use the BM classifi-

cation, and columns (4)-(6) the alternative classification. In column (1), which gives the results from OLS regression, we see that there is a 0.144 standard deviations decline in the provision of non-pro-poor public goods in Congress-held constituencies, which is offset by 0.209 sds relative increase for public goods that are pro-poor. Turning next to the IV design, shown in columns (2) and (3) (using the first-stage models (2) and (1), respectively), we see that the results are somewhat similar, though considerably amplified. In Congress-held constituencies, there is a decline of 0.381 (0.445, in model (1)) sds in non-pro-poor goods; where the goods are pro-poor, this is offset by a 0.547 (0.550) sds increase.

Using the alternative classification scheme, which is deemed to be the more appropriate one given the expanded list of public goods available in the data set, I find generally similar results. Using OLS, Congress-held constituencies see little change in non-pro-poor public goods, and a 0.057 sds decline in pro-poor goods. Instrumenting for Congress victory, in columns (5)-(6), Congress-held constituencies show declines of 0.211 (0.256) sds for non-pro-poor goods, which is offset by a 0.260 (0.258) sds increase when the goods are pro-poor.

Though the results are sensitive to the classification scheme employed, it is clear that constituencies represented by Congress give greater priority to the provision of pro-poor public goods, with relative increases of approximately 0.260 and 0.550 standard deviations in Congress-held constituencies, in contrast to the relative decline in non-Congress constituencies. As the costs of these items are not known, nor their value to constituents, these results must be taken only as suggestive of the parties' priorities. To more closely explore the effects of Congress representation, I now turn to regression analysis employing model (4), which will give the effect of Congress representation on the full list of public goods.

Disaggregated Public Goods

Table 6 presents the disaggregated results. Columns (1)-(2) and (5)-(6) give the mean levels of the respective public goods in 1991 and 2001. Columns (3) and (7) give the results from

an OLS regression, showing the coefficients on Congress victory. Columns (4) and (8) show the results from the IV regression, using model (2) in the first-stage, which includes the assassination/vote-margin interaction term. There is little evidence in the OLS regression for Congress victory having large effects on public goods provision.

Turning to the IV results, we immediately see a substantial difference in the estimated party coefficients. Congress victory leads to a 19.8 ppts increase in tap water availability (significant at the 5% level), a 21.7 ppts decline in well water (5% level), and a 12.8 ppts increase in handpump water (5% level). Congress victory also leads to a 14.7 ppts decline in agricultural electrification (5% level), a 13.2 ppts decline in industrial electrification (10% level), and a 14.2 ppts (10% level) decline in telephone coverage. Access to an educational facility increases by 4.1 ppts (10% level), which we will see subsequently is due primarily to an extension of primary education. The percentage of land that is uncultivated increases by 5.8 ppts (10% level), while the percentage of cultivated land which is irrigated by government canals increases by 8.8 ppts (10% level).

The magnitude of these effects is remarkable. The increase in tap water coverage, 19.8 ppts, is of the same magnitude as the overall increase in tap water availability, which during this decade increased from 19% in 1991 to 39% in 2001. The increase in handpump availability shows relative increases of a similar magnitude. The decline in well water access, 21.7 ppts, was quite a bit larger than the overall decline, which brought well water access down from 67% in 1991 to 62% in 2001, continuing a downward trend already seen between 1971-1991.[42] Apparently, the changes in water access occurring nationwide were accelerated by the victory of the Congress party. In contrast, Congress victory served to significantly slow the extension of electrification. While agricultural electrification increased from 55% to 63% during this time, the increase was 14.7 ppts smaller in constituencies won by Congress,

[42]As described above, the dependence on well water is a marker of underdevelopment.

essentially wiping out any improvement. For industrial electrification, there was a national increase from 36% to 55%, which was reduced by 13.2 ppts with Congress victory. Telephone access increased from 10% to 43% during this time, but was 14.2 ppts smaller in Congress constituencies. Finally, the percentage of cultivated land covered by government canals during this time rose from 11% to 15%, but by 8.8 ppts in Congress constituencies.

We saw in table 3 that the samples were slightly unbalanced according to the percentage of the population that were brahmins, the level of caste fragmentation, and the landlord-based tenure system. In table 7 I re-estimate the IV specifications including each of these variables separately as controls. The results are robust to the inclusion of these variables: though the coefficients become marginally insignificant for telephones and industrial electrification with the inclusion of the brahmin control, and for government canal irrigation with the inclusion of the landlord control, the magnitude of the coefficients is relatively stable.

The results obtained above come from an IV specification using model (2) as the first-stage regression. I next re-estimate the relationship between Congress victory and public goods using model (1) in the first stage, with only the assassination variable generating variation in Congress victory. Table 8 gives the results from these alternative specifications. Column (3) shows the results using the un-interacted assassination variable in the first-stage regression. The coefficient for tap water is 29.5 ppts, compared to 19.8 ppts in the original specification. The coefficient for handpumps is a statistically insignificant 4.3 ppts, as compared to 11.9 ppts in the original. The coefficient on well water is -28.4, as opposed to -21.7; and the coefficients on agricultural and industrial electrification are -17.7 and -17.8, respectively, as opposed to -14.7 and -13.2 in the original specification. For other public goods, the coefficients are not conspicuously different than in the original regressions, though there is sometimes a decline in the statistical significance. Insofar as there are differences in the results obtained across the two specifications, the explanation likely lies in the slightly different complier groups for the two instruments. Specifically, because 10 of the 15 states held all

their elections either before or after the assassination, the effect of the instrument cannot be distinguished from state-level fixed effects for this sub-sample, meaning the complier group will be limited to only the 5 states with variation in the assassination variable. To test this hypothesis, I re-estimate the original regression, which includes the interaction term, but limiting the sample to these 5 states. We see that the coefficients are similar to those found in the un-interacted specifications, giving credence to this explanation.[43]

In sum, Congress victory leads to a significant change in the patterns of public goods allocations. The presence of both positive and negative effects is indicative of not merely a general increase in patronage for Congress constituencies, but of a more subtle reallocation of public goods. Priority is shifted to items relatively favored by the poor (drinking water and education), and away from those favored by more affluent classes (agricultural and industrial electrification and telephones),[44] consistent with the earlier findings using class-based classifications of the public goods.

1.5.5 IV Interpretations and Incumbency Status

One of the principal concerns with this identification strategy is that the LATE being estimated is that for a switching of party identity under the condition of the victorious candidate's having only a small probability of returning to power in the next election. In this case,

[43]Even in model (2), the complier group is composed largely, though not exclusively, of the 5 states with elections both before and after the assassination. In results not shown, I find that the coefficients from an estimation of the first stage regression using the 10 states voting entirely before or after the assassination are quite similar to those obtained using the other 5 states, and are highly significant. However, the F-stats using the 10-state sample are much smaller, due to the collinearity of the state fixed effects with the assassination variable.

[44]The increase in handpump drinking water, though interpreted here as favoring the interests of the poor, might also be interpretable as indicative of the party's effectiveness in delivering patronage, as this is an item well known for its use in co-opting local notables (Nayak *et al.*, 2002). Similarly, the increase in government canal irrigation also lends itself to multiple interpretations: as an allocation favorable to the agricultural elite, a means of providing rural employment, and a mechanism for securing corruption rents (Wade, 1982).

the estimated results may reflect the implementation of atypical policies for the purpose of increasing the likelihood of winning an otherwise unfavorable constituency; or, alternatively, as the pure expression of personal preference unconstrained by hopes of future electoral success. Against this argument, in results not shown I find that the probability of victory in 1996 for Congress incumbents in constituencies voting after the assassination is no lower than for incumbents in constituencies voting before the assassination (with the inclusion of state fixed effects). However, this does not rule out the possibility that the similarity in the probability of re-election is in fact driven by the politicians' having successfully undertaken strategic policy interventions for the purpose of holding seats otherwise unfavorable to the party.

To address this concern, I next disaggregate the results according to the incumbency status of the Congress party at the time of the 1991 election: presumably, non-incumbents would be more likely to view victories due to the assassination as tenuous, and to undertake atypical policy interventions; insofar as the results found are stronger for non-incumbents, this will lend support to explanations based on the differing incentives of politicians elected because of the assassination. Again, I run regressions using both models (3) and (4), with the public goods estimated separately and aggregated into a single regression.

Table 9 shows the effects of the assassination in the first-stage regression, disaggregating the sample according to incumbency status. There are 170 constituencies in which the Congress party had incumbency status, and 279 in which it did not. The F-stat for the non-incumbent sample is 9.785 when only the non-interacted assassination variable is included, which decreases to 7.642 with the inclusion of the interaction term. For the sample of incumbents, the F-stats are 21.113 without the interaction term, and 22.773 with the interaction term. Even at this level of aggregation the instrument is highly predictive in the first stage, though the F-stat for non-incumbents indicates that this instrument will be somewhat weak for this sub-sample (Stock and Yogo, 2004).

Pro-Poor Public Goods

Table 10 gives the results from the model (3) specification, where public goods are normalized and classified by their class character. Panel A gives results using the sample of non-incumbents; Panel B the results for incumbents. Again, I use both the BM classification scheme and the alternative classification scheme. In columns (2) and (3), using the BM classification and instrumenting for Congress representation, non-incumbent Congress MPs are associated with a 0.532 (0.568) sds relative increase in pro-poor public goods, and incumbents with a 0.664 (0.649) sds relative increase, against the relative declines in pro-poor public goods in non-Congress constituencies. Using the alternative classification scheme, non-incumbent Congress MPs are associated with a 0.587 (0.613) sds relative increase in pro-poor public goods, and incumbents with a 0.305 (0.361) sds relative increase. In both classification schemes, incumbent and non-incumbent Congress MPs are associated with a decline in non-pro-poor goods in comparison to non-Congress MPs. These results are consistent with what we found earlier using the full sample of constituencies; the most conspicuous difference is that non-incumbents are found to be associated with a larger relative increase in pro-poor public goods under the alternative classification scheme.

Disaggregated Public Goods

As before, I also estimate the model (4) specification, in which the level change between 1991 and 2001 is estimated separately for each public good. Table 11 gives the results. The findings largely confirm the earlier interpretations, in some cases even strengthening them, but adding significant nuance. The increases in tap water and government canals are seen to be quite comparable across incumbency status. However, the decline in well water is driven entirely by the election of non-incumbents, with non-incumbent Congress

constituencies seeing a decline of well water of 45.2 ppts[45] and incumbent Congress constituencies an insignificant 5.1 ppts decline. The result for handpumps is seen to be driven by an expansion in incumbent constituencies of 17.7 ppts (1% level), with non-incumbent constituencies showing a statistically insignificant 5.7 ppts increase. Another interesting result is that the decline in electrification is found only in the non-incumbent constituencies. Congress-incumbent constituencies see no change in electrification, but instead a 19.8 ppts decline in telephone access, a 10.5 ppts decline in paved roads, and a 15.0 ppts decline in health sub-centers. In addition, we see that the increase in uncultivated land occurs in non-incumbent constituencies but not incumbent constituencies, consistent with the findings on agricultural electrification. The availability of a primary school increases by 5.9 ppts with incumbent Congress representatives; while middle school availability declines 8.1 ppts with non-incumbent Congress representatives.

In sum, while the results on Congress representation leading to increases in pro-poor public goods continues to hold, the trade-offs involved are somewhat distinct depending on the incumbency status of the politician elected. Where the politician is an incumbent, drinking water and primary schools increase, while telephone availability, paved roads, and health sub-centers decline. Where the politician is newly elected, drinking water again increases, but now it is electrification that declines. The precise composition of these changes is likely driven by the relative influence of incumbent and non-incumbent politicians with local bureaucrats and the central and state government, as well as differing relationships with the local elite.[46] The results do not support the hypothesis that the effects found through

[45]The large magnitude of this coefficient is likely driven by the weakness of the instrument for non incumbents (Bound *et al.*, 1995; Staiger and Stock, 1997).

[46]For example, the lack of a decline in electrification in incumbent constituencies may be interpretable as due to incumbents' having established relationships with the local elites, though a lack of competence by non-incumbents in securing services through the exercise of political influence may also be at play. Similar factors may explain the increase in uncultivated land in non-incumbent constituencies.

the IV are being driven by the tenuousness of the party's hold on power in constituencies won due to the assassination.[47]

1.5.6 Regression Discontinuity Results

In light of the preceding results, it is interesting and instructive to compare them to those obtained using a regression discontinuity identification strategy. As argued previously, efforts of rival parties to appeal to the median voter may yield RD results driven primarily by electoral pressures rather than the policy preferences, and as such may not be representative of the party's behavior when winning by larger margins. In addition, where there is a signaling component to elections, victories won by small margins may yield leaders unable or unwilling to pursue their most preferred policies. To further explore the possibility that such phenomena may yield RD LATEs that are not generalizable away from the discontinuity, I now estimate the effects of Congress victory swapping out the IV with a regression discontinuity design.

The models are specified as before, but now with polynomials included in the running variable, the 1991 election margin:

$$\begin{aligned} PG2001norm_{g,i} &= \alpha + \rho Congress_i + \psi(Congress_i \times ProPoor_{g,i}) \\ &\quad + g(Marg_{1991,i})Cong_i + g(Marg_{1991,i})(1 - Cong_i) \\ &\quad + ProPoor \times [g(Marg_{1991,i})Cong_i + g(Marg_{1991,i})(1 - Cong_i)] \\ &\quad + \gamma PG1991norm_{g,i} + \vartheta \mathbf{X}_i + \pi \mathbf{E}_i + \sigma_i + \varepsilon_i \end{aligned} \tag{1.5}$$

[47] In results not shown, I estimate the baseline regressions separately for three samples: (1) those in which the party either lost in 1991 or won by a margin of less than 10; (2) those in which it either lost or won by a margin of 10-20; and (3) those in which it either lost or won by a margin of more than 20. The observations are matched on their 1989 vote margin. These disaggregations show similar results across the samples; importantly, even candidates winning by a very large margin show results of similar magnitude and significance, despite enjoying a margin not suggestive of a tenuous hold on power.

and

$$\begin{aligned} PG2001_i &= \alpha + \beta Cong_i + g(Marg_{1991,i})Cong_i + g(Marg_{1991,i})(1 - Cong_i) \\ &\quad + \gamma PG1991_i + \vartheta \mathbf{X}_i + \pi \mathbf{E_i} + \sigma_i + \varepsilon_i. \end{aligned} \tag{1.6}$$

$g(.)$ is a polynomial estimated separately for either side of the discontinuity, specified as a quartic where the entire sample is included, and as a linear function where the sample is trimmed to a sub-sample around the discontinuity. When estimating model (5), separate quartics are included for pro-poor and non-pro-poor items.

For the RD design to be valid, it is necessary that relevant covariates be continuous at the electoral (win/loss) threshold, so that the only difference between the samples at the discontinuity will be the party representing the constituency. Table 12 shows the sample balance across the electoral threshold. Columns (1)-(2) give the simple means in the 1991 levels of the indicates items for constituencies within the optimal bandwidth, as determined by the method proposed by Imbens and Kalyanaraman (2009). Column (3) gives the coefficients on Congress victory using model (4) and a local linear regression within the optimal bandwidths. The only differences are that the percentage of the work force composed by miners is 2.9 ppts smaller in constituencies won by Congress, and the index of rockiness of the land is 0.1 smaller (10% level). In column (4) are given the differences using the full sample with quartics estimated separately for each side of the discontinuity. Here we see no imbalance in the samples. Having shown sample balance in constituency characteristics, a regression discontinuity design will be valid (Imbens and Lemieux, 2008).

Figure 7 gives a preview of the results, graphing the residuals from a regression of the 2001 levels of the public goods on the 1991 level and state fixed effects against the 1991 vote share. The public goods represented are tap water, well water, and agricultural and industrial electrification, public goods for which the IV specification showed large and significant

results. The graphical representation of the RDs, however, show no sharp discontinuities for these public goods at the electoral discontinuity.

Table 13 shows the results of the RD regressions using model (5). No effects of Congress representation are seen on public goods using constituencies within the optimal bandwidth (columns (1) and (3)). When using the full sample with quartic polynomials, Congress representation leads to a 0.199 and 0.148 sds increase in pro-poor public goods for the BM and alternative classifications, respectively. However, these coefficients are not statistically significant.

To more closely examine the effects of Congress representation as identified through an RD design, I next present the results from model (6), where each public good is included in a separate regression. In table 14, columns (1)-(2) and (5)-(6) give the mean level of change in the public goods on either side of the discontinuity, using optimal bandwidths. Columns (3) and (7) give the coefficients and standard errors from a local linear regression within the optimal bandwidth, while columns (4) and (8) use the full sample and include a quartic polynomial. As seen in the first two rows, there is no difference in the provision of pro-poor public goods at the discontinuity: the coefficients are small and statistically insignificant. Using the full sample and the quartic polynomial, drinking water access declines by 1.1 ppts (5% level) with Congress representation, paved roads decline by 6.4 ppts (5% level), and adult literacy centers increase by 6.9 ppts (10% level). Using only the sample of constituencies within the optimal bandwidth and a local linear regression, we see a 6.0 ppts (1% level) increase in electrification, and a 0.7 ppts (10% level) increase in health centers. Figure 8 depicts the four public goods found to be statistically significant in the RD design (excluding health centers). The discontinuities found in table 13 are somewhat evident for paved roads and adult literacy centers, but not for electrification or drinking water.

1.5.7 Interpreting the RD

For the purpose of comparison, Table 15 presents the RD results side-by-side with the OLS and IV. For completeness, RDs are included using the 1996, 1998, and 1999 elections as the explanatory variable. For all the RDs, the full sample is used with quartic polynomials in the party's vote margin for the respective years. The list of public goods is reduced to only those for which significant results are found in any of the specifications. The sharp contrast between the LATEs captured by the RD and IV designs is apparent. The preferred explanation for the null results found using the RD is that the effect of the party's coming to power depends upon the margin by which it has won. The functional form of this dependence is not important, so long as it has the feature that $\lim_{marg \downarrow 0} \beta(margin) = 0$. This condition would be fulfilled, for example, by a function in which β took a fixed value above some threshold, and a value of 0 below it. Though explanations based on either median voter convergence or the signaling function of election margins are both plausible, below I give evidence as to why the latter is the likelier of the two, based on candidate characteristics in closely contested elections and incumbency effects estimated at the discontinuity.

The insignificance of the RD coefficients, I have argued, is due to their capturing a local average treatment effect in the vicinity of the discontinuity, where distinct electoral dynamics obtain. There is also the possibility, however, that the RD is not identified, due to sorting around the discontinuity. Though the balance table ostensibly ruled out this potential problem, there is one particular variant of candidate sorting that requires greater scrutiny: namely, sorting by incumbency status. This issue has been discussed by Grimmer et al. (2011), who show that US congressional candidates who either belong to the same party as that holding state-level power, or who are the incumbent candidate, are more likely to win closely contested elections. Consistent with this finding, we see in table 12 that incumbent parties are 23.1 ppts more likely to win closely contested elections than are non-incumbents

using the local linear regression (10.8 ppts with the quartic), though the difference is not statistically significant. Figure 9 plots the relationship between the 1991 vote margin and incumbency status. Incumbents are more likely to win closely contested elections, though due to the smallness of the sample size the difference is statistically indistinguishable. Though the RD for this reason cannot be regarded as well identified, I will argue below that this finding in fact gives important evidence for the mechanism underlying the RD null results.

I next turn to a discussion of the incumbency advantage estimated through the IV and RD designs, which I will argue is also important for understanding the RD results. Whereas an incumbency disadvantage in Indian politics has been identified by Linden (2004) through the use of an RD design, with incumbents 14-18 ppts less likely to win re-election, the use of the assassination instrument yields an incumbency advantage. In table 17, I estimate the effect of incumbency on the probability of winning the subsequent election using OLS, IV, and RD designs. In columns (1)-(2) are estimates from the OLS using only constituencies voting before the assassination: including state fixed effects, Congress incumbents are seen to be 21.8 ppts more likely to win than non-incumbents. In columns (3)-(4), which include the full sample of constituencies, Congress incumbents are seen to enjoy an advantage of 19.2 ppts. In columns (5)-(6) incumbency status is instrumented for using the assassination variable, yielding an incumbency advantage of a similar magnitude, 16.7 ppts, though it is insignificant due to the increase in standard errors. Finally, in columns (7)-(8) are shown the results using an RD design to estimate the incumbency advantage: as in Linden (2004), I find a *disadvantage* to incumbent parties seeking re-election (though the results are not significant due to the smallness of the sample size).

In sum, the winners of closely contested elections are both more likely to be incumbents, and less likely to win the following election, whereas no such incumbency disadvantage is found using the IV design. My preferred explanation reconciling these findings with the RD null results for public goods is as follows: because winners of closely contested elections

tend to be incumbents, the narrowness in their margin of victory is a signal to other party members and local bureaucrats of their political weakness and reduced likelihood of winning future elections, which leads to the loss of influence within the party and a concomitant inability to shape policy outcomes (reflected in the null results found with the RD design). These constraints on policy-making, in turn, reinforce the candidates's weakness, leading to the incumbency disadvantage seen to characterize those winning by a narrow margin. While I regard the paired findings of sorting around the discontinuity according to incumbency status and incumbency disadvantage for winners of closely contested elections as pointing to some such political-signaling dynamic underlying the null results found with the RD design, I cannot rule out the possibility that these features are incidental, and the true mechanism driving the RD results is the more traditional policy convergence of the political economy literature.

RDs and Swing Constituencies

A final possibility for the interpretation of the RD results is that closely contested constituencies are considered by political actors to be swing constituencies, and are consequently allocated higher levels of public goods on both sides of the discontinuity. Swing-targeting is only one possible prediction within the class of models from whence the concept derives; depending on the parameters of the model, core-targeting may occur instead, with the party choosing to reward its most ardent supporters.[48]

Table 17 shows the results of OLS regressions using dummy variables to capture allocations towards swing and core constituencies. Swing constituencies are defined as those in which the party won or lost the 1991 election by a margin of 5 points or less. Core constituencies are defined in two different ways: first, if the Congress party won the constituency

[48]See page 4, footnote 7, for a fuller explanation of these terms and the class of models to which they belong.

by a margin greater than than 20 ppts in the 1991 election; and, second, if the Congress party has won the constituency in all four election between 1980 and 1991. The estimates of the first are given in columns (3) and (8); the estimates of the second in columns (5) and (10). There is little evidence of swing-targeting in either specification; core-targeting, however, does seem to occur. Where core constituencies are defined as those in which the party wins by a margin greater than 20 ppts, there is a statistically significant increase in tap water (4.2 ppts), handpump water (3.7 ppts), river water (2.3 ppts), postal services (3.1 ppts), and high schools (1.7 ppts). In addition, there seems to be increased support for electrified irrigation, with non-electrified well irrigation declining 1.1 ppts, and electrified well irrigation increasing by 3.0 ppts.

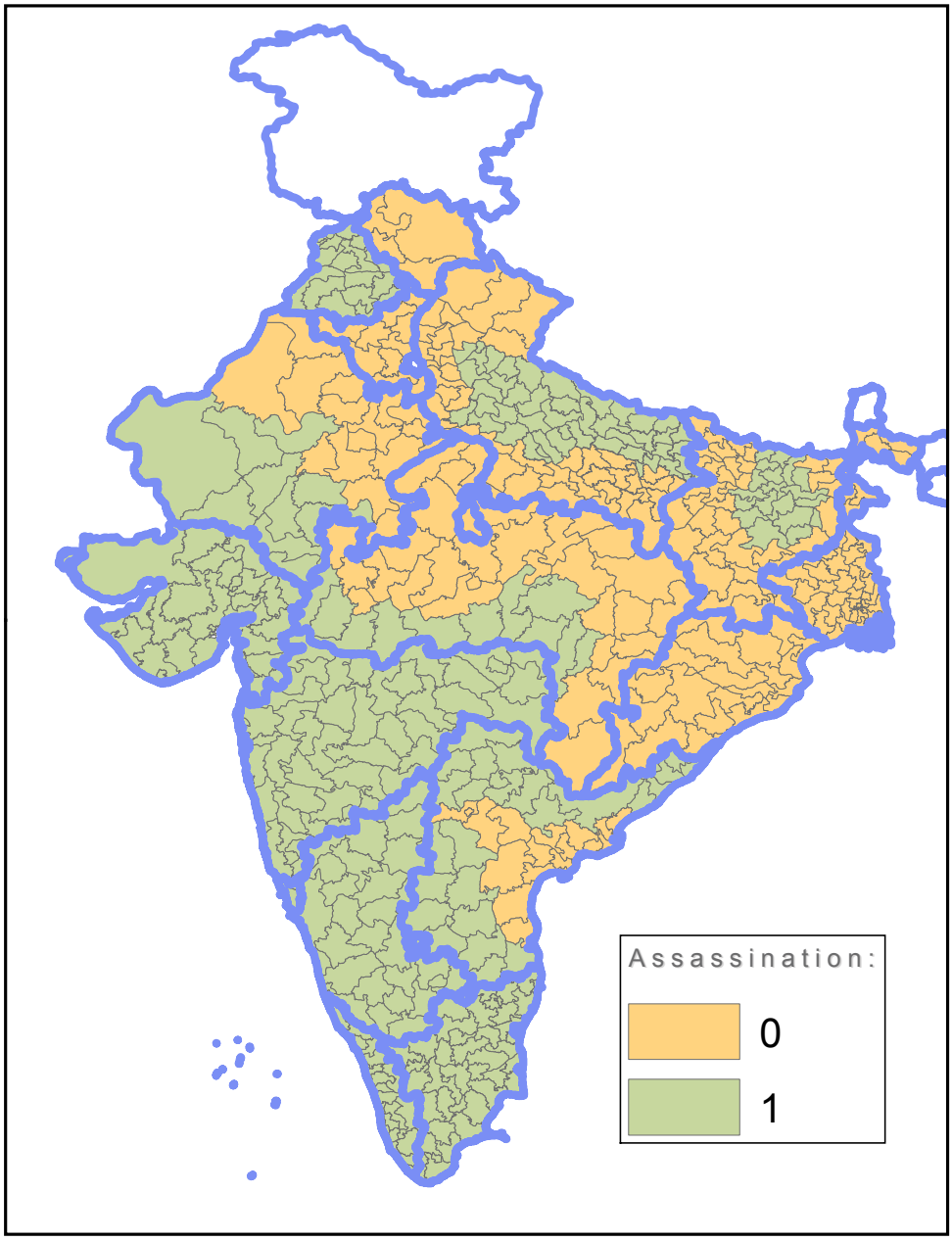
1.6 Conclusion

The allocation of public goods is strongly influenced by representation by the populist Congress party: pro-poor public goods are rapidly expanded, with dramatic improvements in drinking water access (increases in tap and handpump water against a decline in well water), government irrigation canals, and education facilities, and declines in electrification, telephone coverage, and cultivated land. When disaggregated by the incumbency status of the exogenously assigned representative, one finds the same emphasis on pro-poor public goods in both samples, though the composition is somewhat different. There is a suggestive similarity in the results found here with those in Albouy (2009), where the party affiliated with the lower stratums of society is associated with increases in spending more closely aligned with the interests of the latter, and declines in spending for those items given higher priority by more affluent groups.

Where the identification strategy is shifted to a regression discontinuity design, little effect is found from Congress representation. Two possible mechanisms are posited for explaining

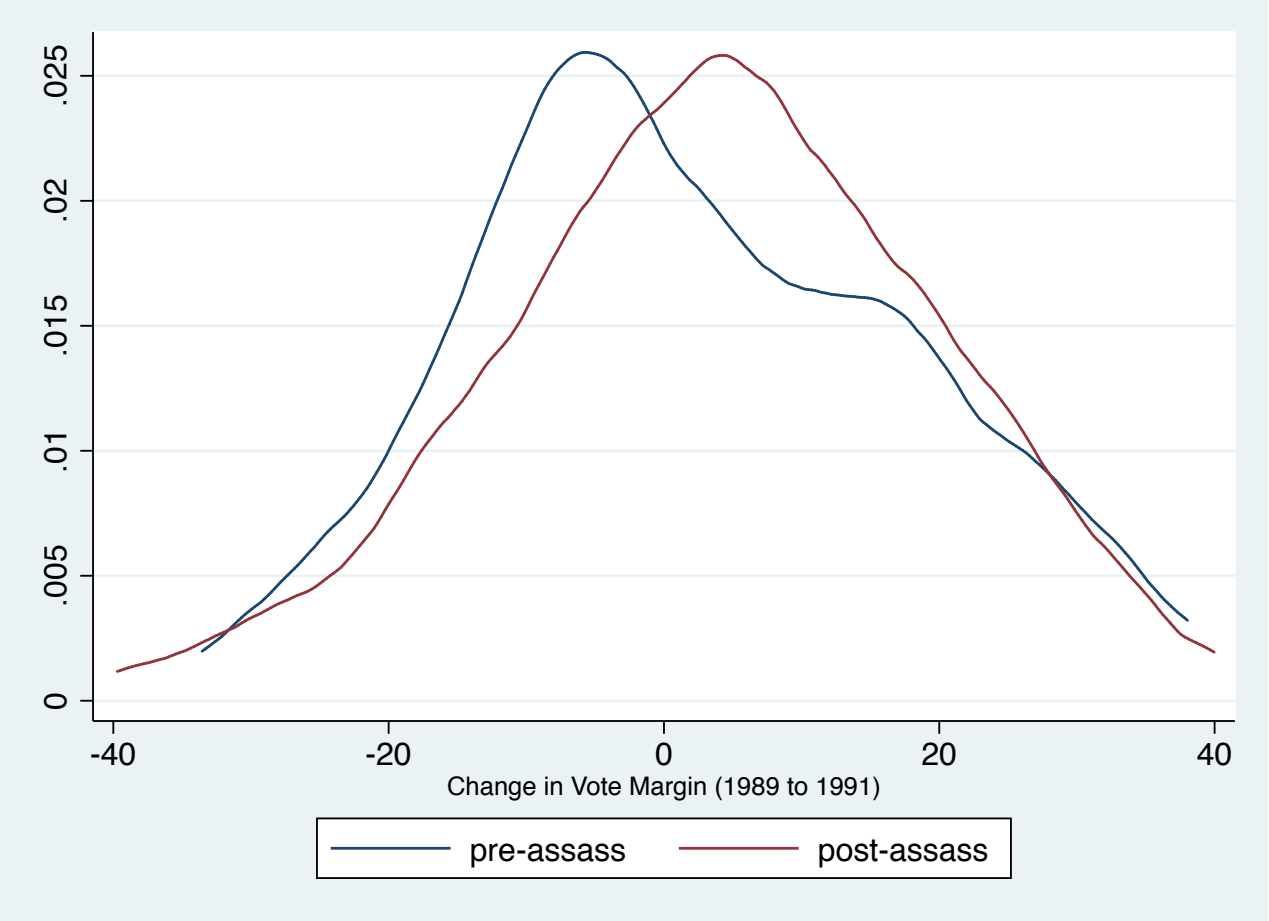
this result: pre-election policy convergence in closely contested constituencies, and post-election adaptation of policy based on the margin of victory. My preferred explanation leans towards the latter, with winners of closely contested elections facing significant constraints in their ability to influence policy, likely due to a loss of influence within the party, which is reflected in a reduced probability of winning the subsequent election. The stark contrast between the RD null results and the significant results of the IV, coupled with the evidence for sorting around the threshold and differential advantages to incumbency, makes clear the distinct electoral dynamics underlying the LATEs captured by the two identification strategies. The interpretation of RD results in electoral setting must remain cognizant of the incentives for policy moderation, and constraints on policy-implementation, that will be present in closely contested elections, and which may serve to obscure party effects that would obtain were the margin of victory greater.

Figure 1.1: Distribution of Constituencies



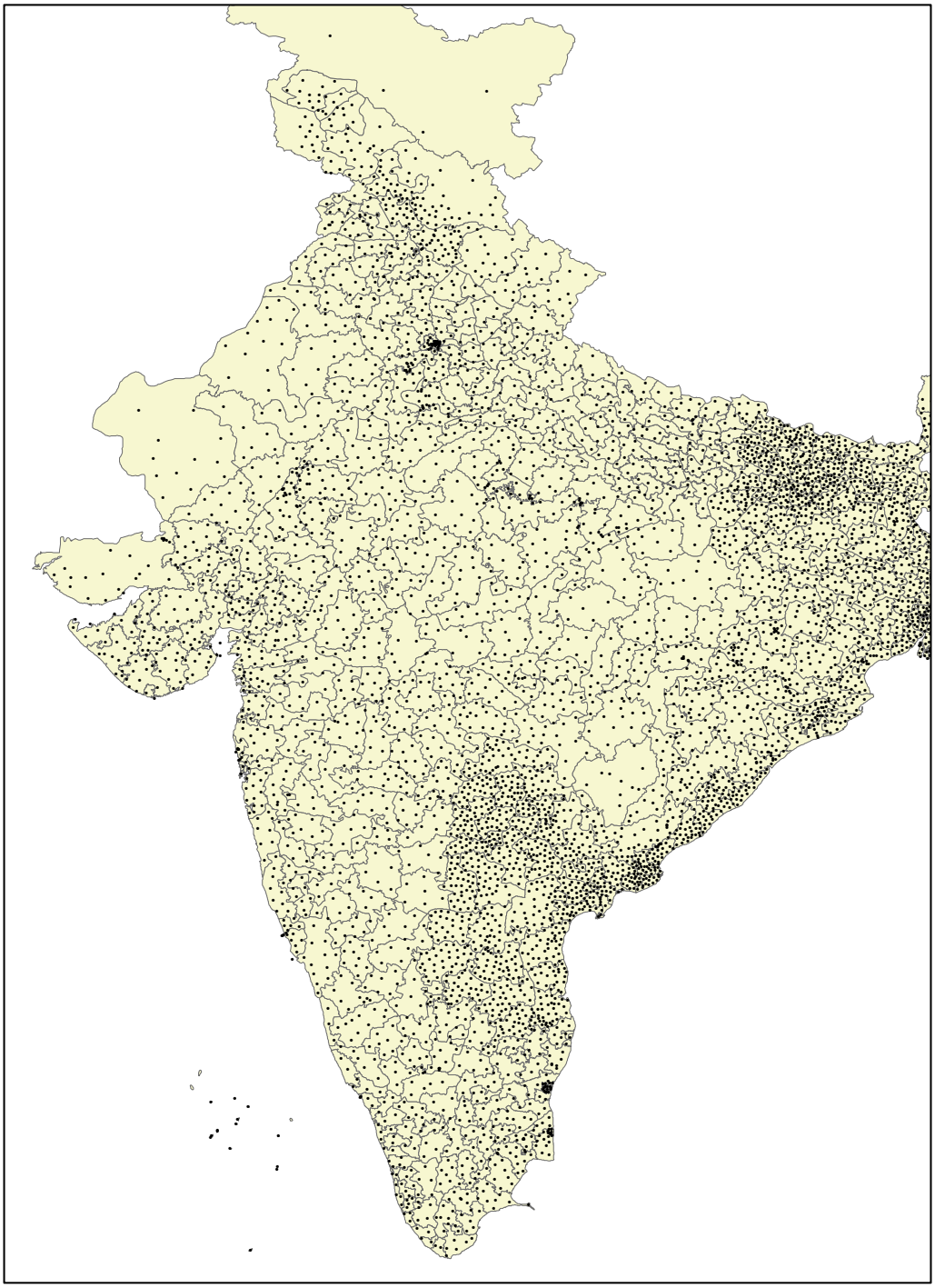
Notes: This map shows Indian states and parliamentary constituencies. States are indicated by bold boundary lines; the smaller units are parliamentary constituencies. Constituencies are color coded according to whether elections were held before or after the assassination.

Figure 1.2: Distribution of Votes



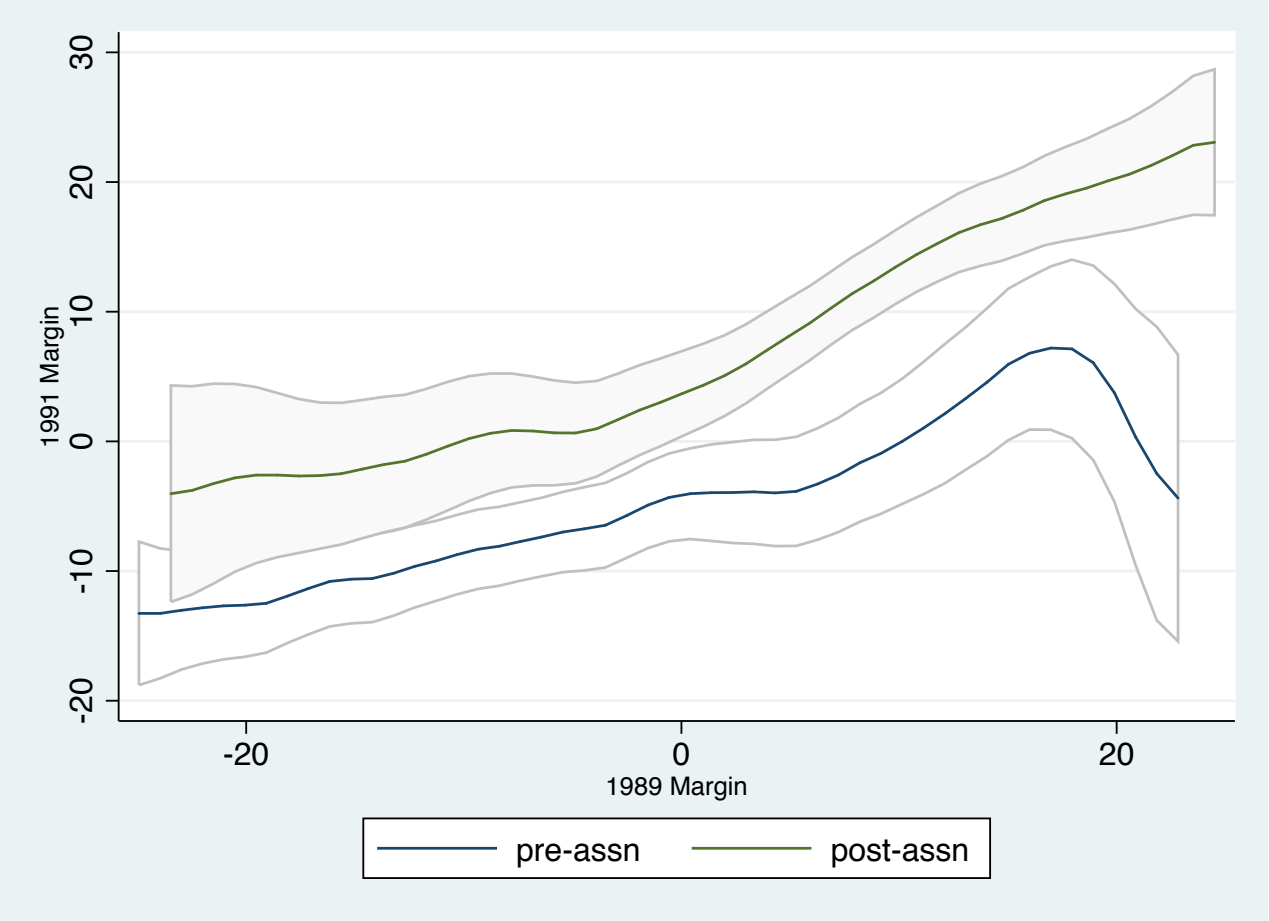
Notes: This figure shows the distributions of the change in the Congress party's vote margin between the 1989 and 1991 elections, disaggregated by whether the constituency voted before or after the assassination.

Figure 1.3: Sub-Districts and Electoral Constituencies



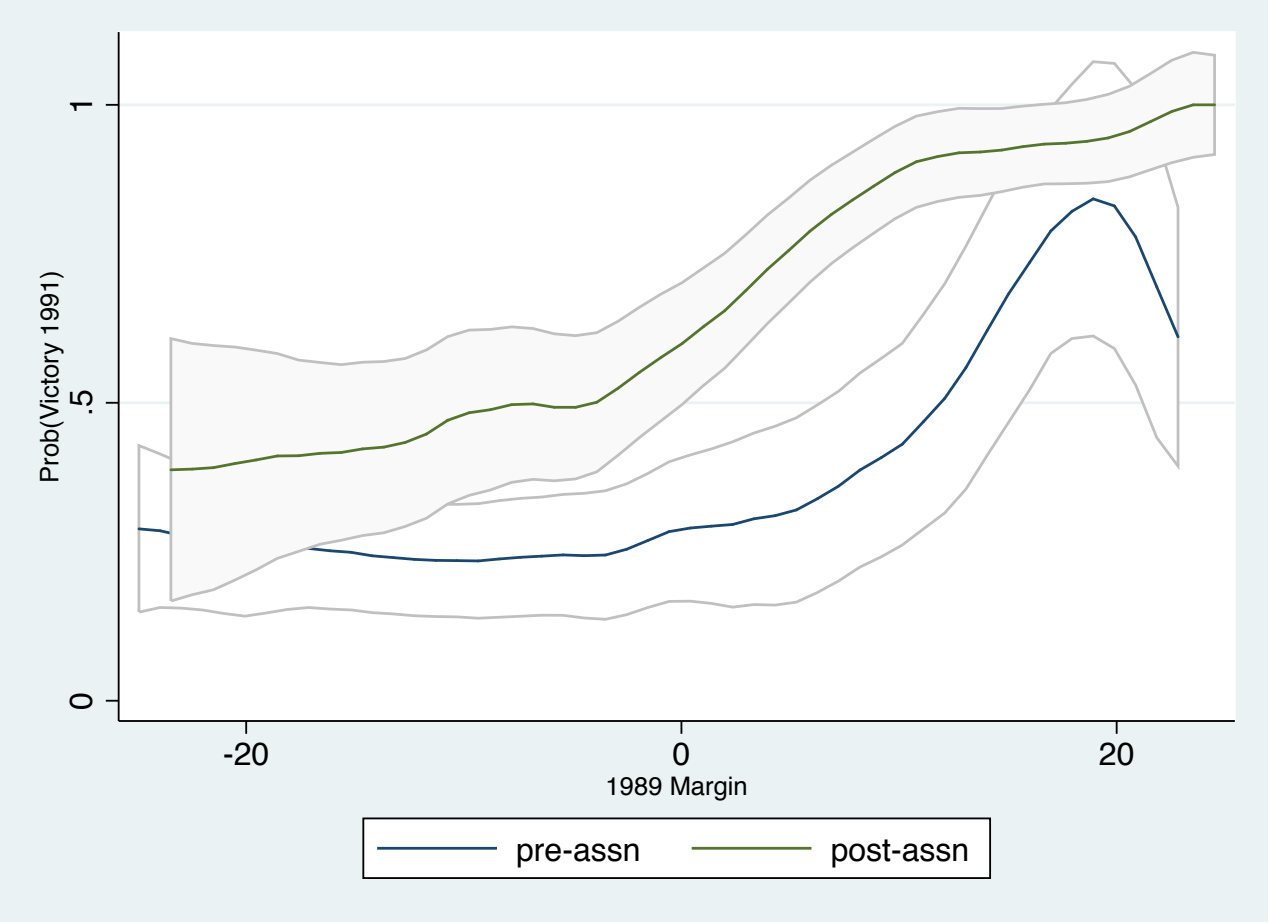
Notes: This map shown Indian parliamentary constituencies and the centroids of sub-districts. Constituencies are indicated by boundary lines, and sub-districts by points.

Figure 1.4: Assassination and Congress Election Margin



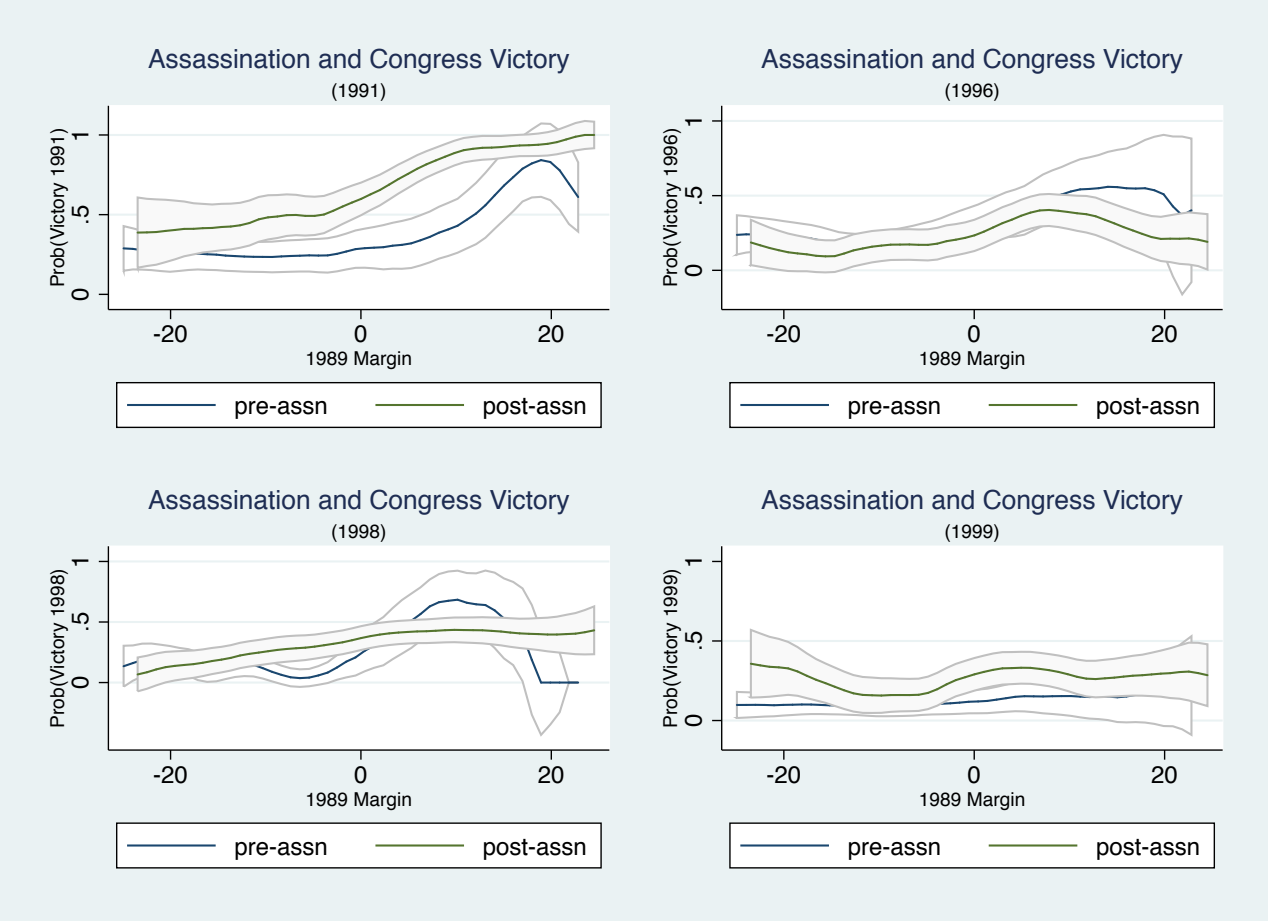
Notes: This figure graphs the Congress party's 1991 vote margin against its 1989 vote margin, disaggregated by whether the constituency voted before or after the assassination. 95% confidence intervals are shown.

Figure 1.5: Assassination and Congress Victory



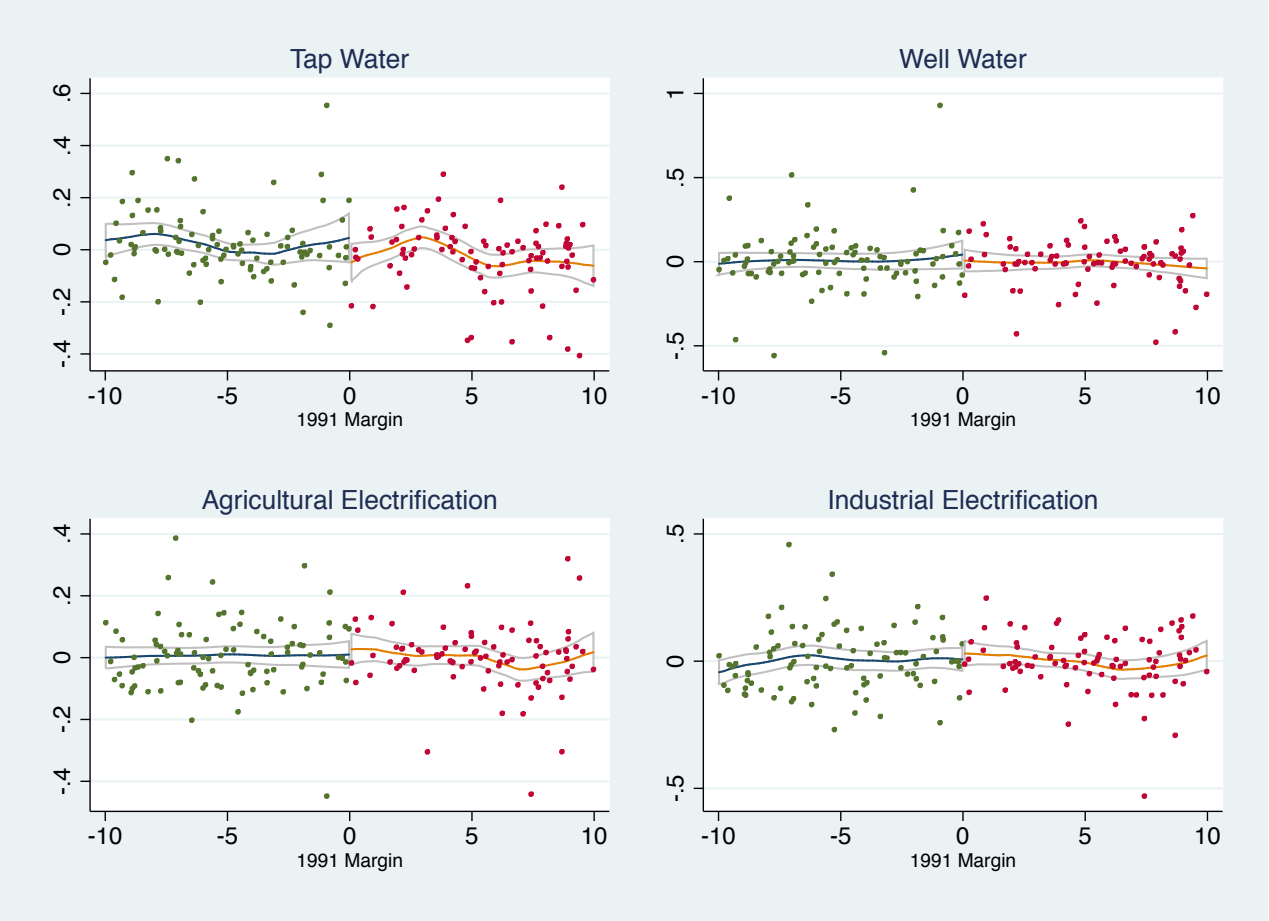
Notes: This figure graphs the Congress party's probability of victory in 1991 against its 1989 vote margin, disaggregated by whether the constituency voted before or after the assassination. 95% confidence intervals are shown.

Figure 1.6: Assassination and 1991-1999 Probability of Victory



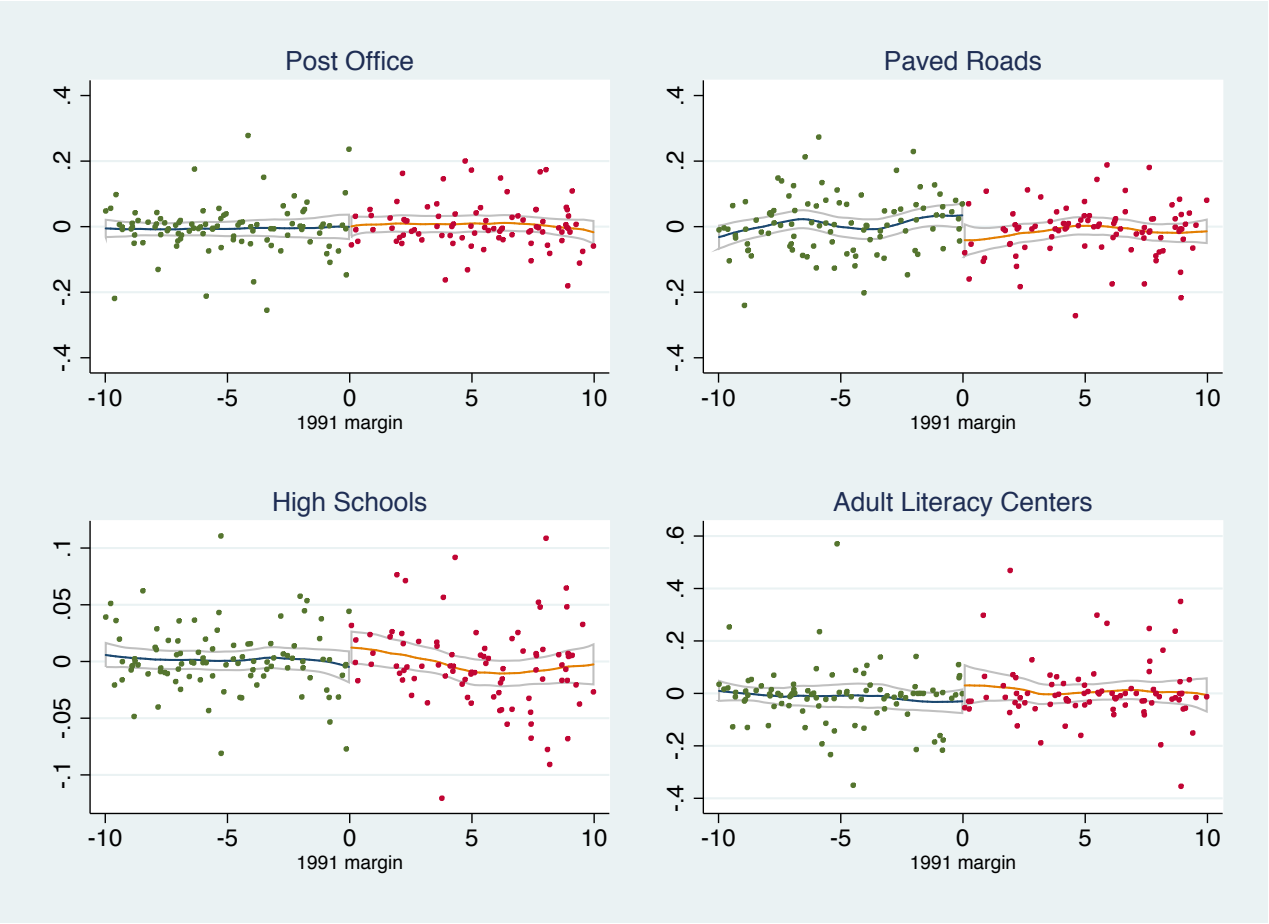
Notes: This figure graphs the Congress party's probability of victory in the 1991, 1996, 1998, and 1991 elections against its 1989 vote margin, disaggregated by whether the constituency voted before or after the assassination. 95% confidence intervals are shown.

Figure 1.7: RDs and Significant IV Public Goods



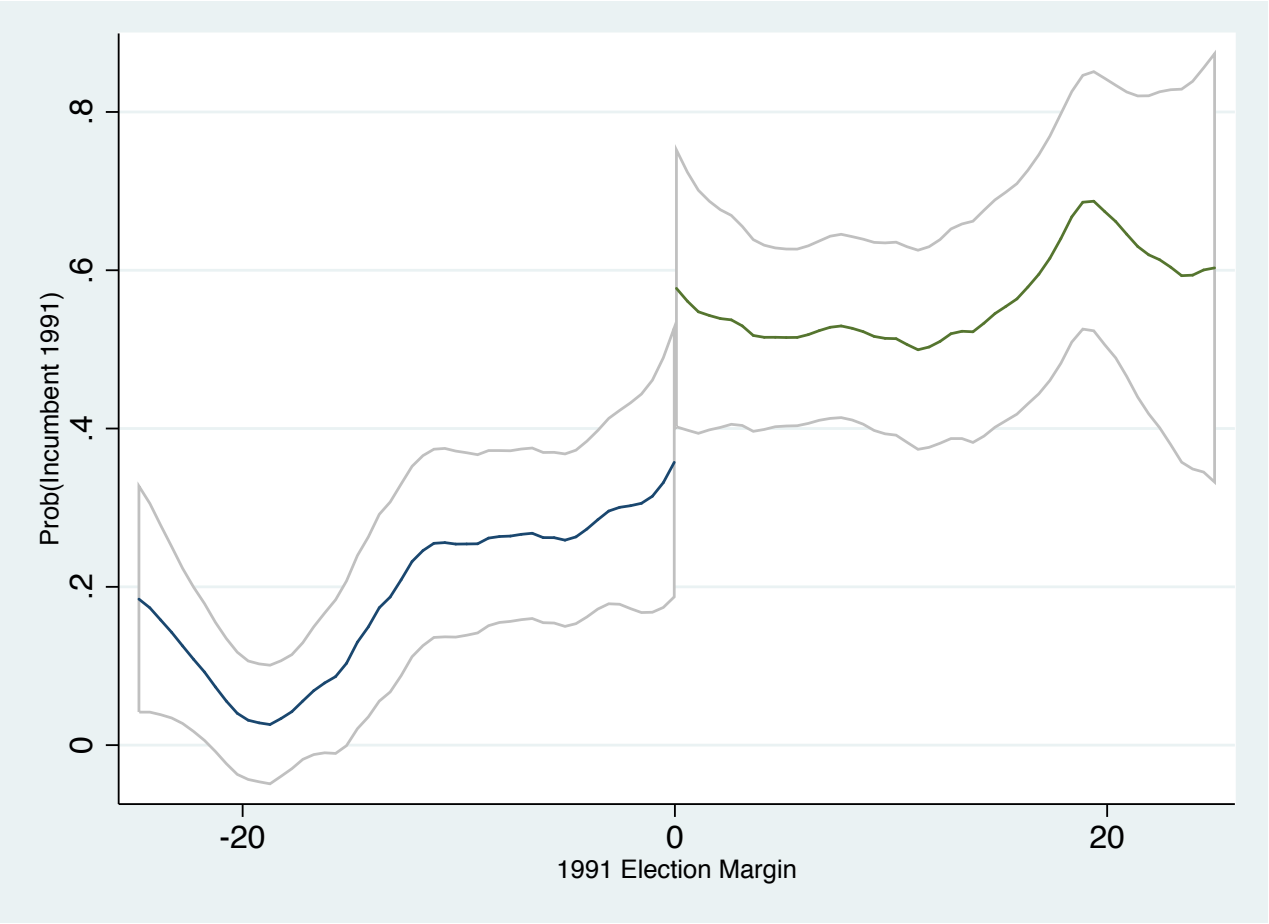
Notes: This figure graphs the Congress party's probability of victory in the 1991, 1996, 1998, and 1991 elections against its 1989 vote margin, disaggregated by whether the constituency voted before or after the assassination. 95% confidence intervals are shown.

Figure 1.8: RDs and Affected Public Goods



Notes: This figure plots the residuals from a regression of the change in public goods on the state fixed effects against the Congress party's 1991 vote margin. 95% confidence intervals are shown.

Figure 1.9: Sorting by Incumbency Status



Notes: This figure plots the incumbency status of the party at the time of the 1991 election against its probability of winning the 1991 election. 95% confidence intervals are shown.

Table 1.1: Public Goods: 1991 and 2001

Variables	1991	2001	Variables	1991	2001
drinking water			**health facilities**		
any	0.93	0.94	health center	0.02	0.02
tap	0.21	0.41	primary	0.05	0.07
well	0.68	0.62	health subcenter	0.09	0.19
handpump	0.58	0.75	maternity-child	0.04	0.07
tubewell	0.23	0.33	hospital	0.03	0.05
river	0.10	0.10	dispensary	0.06	0.06
comm and transp			**irrigation**		
post office	0.32	0.34	any	0.38	0.46
telegraph	0.02	0.03	government canal	0.11	0.15
phone	0.11	0.44	private canal	0.01	0.01
paved road	0.47	0.62	tank	0.03	0.03
electrification			tubewell (electrified)	0.06	0.08
any	0.74	0.78	tubewell (non-electric)	0.07	0.08
domestic	0.68	0.77	well (electrified)	0.03	0.05
agricultural	0.57	0.64	well (non-electric)	0.02	0.02
industrial	0.37	0.56	uncultivated	0.13	0.13
education					
any	0.78	0.81			
primary	0.76	0.80			
middle	0.25	0.33			
high	0.13	0.16			
adult literacy	0.06	0.12			

Notes: Statistics give the percentage of village possessing the indicated good. The sample includes only those 449 constituencies included in our regressions.

Table 1.2: Public Goods: Class Character

Variables	BM	alt	Variables	BM	alt
drinking water			**health facilities**		
any	–	–	health center	–	–
tap	pro-poor	pro-poor	primary	–	–
well	non	non	health subcenter	–	non
handpump	pro-poor	pro-poor	maternity-child	–	–
tubewell	pro-poor	pro-poor	hospital	–	–
river	non	non	dispensary	–	–
comm and transp			**irrigation**		
post office	–	non	any	–	–
telegraph	–	non	government canal	non	non
phone	–	non	private canal	–	–
paved road	non	non	tank	–	–
electrification			tubewell (electrified)	–	–
any	–	–	tubewell (non-electric)	–	–
domestic	–	non	well (electrified)	–	–
agricultural	non	non	well (non-electric)	–	–
industrial	–	non	uncultivated	–	–
education					
any	–	–			
primary	pro-poor	pro-poor			
middle	pro-poor	non			
high	pro-poor	non			
adult literacy	–	–			

Notes: "BM" is the classification scheme given by Bardhan and Mookherjee; "alt" is the alternative scheme. "pro-poor" means that the item has been classified as being relatively preferred by the poor; "non" indicates the good is classified as being relatively preferred by the non poor.

Table 1.3: Balance

	pre-assassin	post-assassin	Difference		
	(1)	(2)	(3)	(4)	(5)
cities					
urbanization	0.181	0.231	0.049***	-0.031	
			(0.015)	(0.007)	
workers					
cultivators	0.091	0.085	-0.007	0.018**	0.013*
			(0.006)	(0.007)	(0.006)
agricultural labor	0.103	0.117	0.014**	0.018*	0.012
			(0.007)	(0.009)	(0.008)
forestry	0.020	0.020	0.000	-0.002	-0.002
			(0.002)	(0.002)	(0.002)
mining	0.017	0.011	-0.006	-0.002	-0.001
			(0.004)	(0.006)	(0.006)
manufacturing (hh)	0.040	0.041	0.001	0.007	0.007
			(0.005)	(0.007)	(0.007)
manufacturing (non-hh)	0.141	0.165	0.024***	-0.014	-0.005
			(0.008)	(0.011)	(0.009)
construction	0.039	0.044	0.005***	-0.004**	-0.003
			(0.002)	(0.002)	(0.002)
trade	0.218	0.213	-0.005	-0.005	-0.006
			(0.005)	(0.006)	(0.006)
transportation	0.071	0.071	0.000	-0.006	-0.004
			(0.003)	(0.004)	(0.004)
other	0.259	0.233	-0.027***	-0.010	-0.009
			(0.007)	(0.009)	(0.009)
marginal workers	0.028	0.032	0.004**	0.001	-0.000
			(0.002)	(0.003)	(0.002)
elections					
victory 1989	0.184	0.543	0.359***	0.041	0.037
			(0.043)	(0.046)	(0.046)
vote share 1989	37.202	42.537	5.334***	0.720	0.683
			(1.070)	(1.111)	(1.115)
margin 1989	-12.137	0.446	12.583***	2.119	1.982
			(1.732)	(1.936)	(1.941)
close election 1989	0.374	0.387	0.013	0.028	0.030
			(0.046)	(0.060)	(0.060)
ethnicity					
brahmins	0.062	0.042	-0.019***	-0.012***	-0.012***
			(0.003)	(0.003)	(0.003)
muslims	0.108	0.078	-0.031***	0.012	0.012
			(0.009)	(0.008)	(0.008)
sikhs	0.013	0.037	0.024**	-0.003	-0.003
			(0.011)	(0.004)	(0.005)
scheduled castes/tribes	0.285	0.228	-0.057***	0.002	-0.004
			(0.01)	(0.02)	(0.02)
caste-religious fragment	0.805	0.843	0.037***	0.031*	0.032*
			(0.014)	(0.016)	(0.016)
geography					
steep/sloping	0.001	0.001	-0.000	-0.001**	-0.001**
			(0.000)	(0.000)	(0.000)
barren/rocky	0.006	0.007	0.001*	-0.001	-0.001
			(0.001)	(0.001)	(0.001)
princely state	0.222	0.314	0.092***	-0.014	-0.016
			(0.032)	(0.032)	(0.032)
zamindar	0.618	0.327	-0.291***	0.096***	0.093**
			(0.035)	(0.036)	(0.036)
state FEs			no	yes	yes
urbanization			no	no	yes

Notes: The differences are estimated from a regression of the indicated variable on the assassination dummy. In columns (4) and (5) controls are included for the urbanization rate and state FEs.

Table 1.4: First Stage: Assassination and Electoral Outcomes

	vote share		election margin		victory	
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Model (1)						
post-assassination	7.381***	6.118***	10.148***	8.404***	0.256***	0.233***
	(1.117)	(0.993)	(1.657)	(1.571)	(0.044)	(0.045)
F-stat	43.663	37.951	37.495	28.622	34.042	26.231
R-squared	0.509	0.783	0.395	0.694	0.297	0.574
N	449	449	449	449	449	449
Panel B: Model (2)						
post-assassination	7.044***	5.934***	8.162***	7.138***	0.355***	0.326***
	(1.760)	(1.434)	(2.658)	(2.277)	(0.070)	(0.066)
post-assn X abs(prior margin)	0.016	0.013	0.129	0.079	-0.007*	-0.006**
	(0.089)	(0.065)	(0.137)	(0.104)	(0.004)	(0.003)
F-stat	16.014	17.133	9.429	9.828	25.811	24.686
R-squared	0.532	0.785	0.396	0.695	0.305	0.578
N	449	449	449	449	449	449
state FEs	no	yes	no	yes	no	yes

Notes: The table gives the results from of a regression of the indicated 1991 electoral outcome on the assassination instruments(s). Covariates include dummies for SC/ST constituencies, constituencies in which opposition parties had a vote-sharing arrangement, and the incumbency status of the Congress politician; as well as the second-stage controls for the urbanization rate, average village population, and number of villages. A cubic in the Congress party's 1989 vote share is included in columns (1) and (2); and a cubic in the party's 1989 vote margin in columns (3)-(6).

Table 1.5: Congress Victory and Pro-Poor Public Goods

Outcome: Public Good 2001 (sd)						
	Bardhan and Mookherjee classification			alternative classification		
	OLS	IV		OLS	IV	
		Model (2)	Model (1)		Model (2)	Model (1)
	(1)	(2)	(3)	(4)	(5)	(6)
Congress	-0.144***	-0.381***	-0.445***	-0.010	-0.211***	-0.256***
	(0.027)	(0.091)	(0.101)	(0.022)	(0.079)	(0.090)
Congress X pro-poor	0.209***	0.547***	0.550***	-0.057**	0.260***	0.258***
	(0.032)	(0.089)	(0.089)	(0.028)	(0.082)	(0.081)
R-squared	0.794	0.789	0.788	0.719	0.715	0.714
N	4480	4480	4480	6720	6720	6720

Notes: The table gives the coefficients from the second stage regression using model (3). Results are given for both the Bardhan and Mookherjee classification and our alternative classification. Columns (2) and (5) show the results using model (2) as the first-stage specification, where both the assassination dummy and its interaction with the prior vote margin are included. Columns (3) and (6) use model (1) as the first-stage specification, with only the uninteracted assassination dummy included. "pro-poor" is a dummy taking the value of 1 if the good is given as being favored by the poor in table 2, and "Congress" a dummy indicating a constituency's being represented by the Cogress party. Covariates include the urbanization rate, average village population, and number of villages. Controls are also included for incumbency status, vote-sharing arrangements in 1989, and SC/ST constituencies; and a cubic is included in the Congress party's 1989 vote margin. State fixed effects and public goods fixed effects are included. Error terms are clustered at the constituency level.

Table 1.6: Congress Victory and Disaggregated Public Goods

outcome variable	1991 level (1)	2001 level (2)	Congress Victory OLS (3)	Congress Victory IV (4)	outcome variable	1991 level (5)	2001 level (6)	Congress Victory OLS (7)	Congress Victory IV (8)
drinking water					**health facilities**				
any	0.93	0.94	-0.000	-0.002	health center	0.01	0.02	-0.001	-0.005
			(0.002)	(0.009)				(0.003)	(0.011)
tap	0.19	0.39	-0.006	0.198**	primary health center	0.05	0.06	0.007*	0.012
			(0.018)	(0.080)				(0.004)	(0.016)
well	0.67	0.62	-0.028	-0.217**	health subcenter	0.08	0.18	-0.002	-0.056
			(0.022)	(0.095)				(0.012)	(0.047)
hand pump	0.58	0.75	0.021	0.128**	maternity-child	0.03	0.07	0.013*	-0.027
			(0.015)	(0.063)				(0.007)	(0.029)
tubewell	0.23	0.32	-0.018	-0.124	hosptial	0.03	0.05	0.006	0.009
			(0.021)	(0.085)				(0.008)	(0.033)
river	0.09	0.10	-0.000	0.017	dispensary	0.06	0.06	-0.002	-0.024
			(0.008)	(0.033)				(0.007)	(0.027)
electrification					**irrigation**				
any	0.73	0.78	-0.011	0.018	any	0.37	0.46	-0.030**	0.040
			(0.010)	(0.039)				(0.013)	(0.054)
domestic	0.67	0.76	-0.017	0.017	government canal	0.11	0.15	-0.004	0.088*
			(0.011)	(0.042)				(0.012)	(0.052)
agricultural	0.55	0.63	-0.023	-0.147**	private canal	0.01	0.01	0.001	-0.003
			(0.014)	(0.060)				(0.001)	(0.005)
industrial	0.36	0.55	-0.013	-0.132*	tank	0.03	0.03	0.006	0.012
			(0.017)	(0.070)				(0.005)	(0.020)
comm and transp					tubewell (electrified)	0.07	0.08	-0.015*	-0.002
post office	0.30	0.32	0.012	-0.026				(0.009)	(0.036)
			(0.011)	(0.047)	tube well (non-elec)	0.07	0.08	-0.008	0.013
telegraph	0.02	0.03	0.001	-0.001				(0.008)	(0.030)
			(0.003)	(0.014)	well (electrified)	0.03	0.05	0.012*	0.004
telephone	0.10	0.43	-0.026	-0.142*				(0.007)	(0.027)
			(0.018)	(0.075)	well (non-elec)	0.02	0.02	-0.010***	0.014
paved roads	0.46	0.61	-0.013	-0.047				(0.004)	(0.015)
			(0.011)	(0.043)	uncultivated	0.13	0.12	0.007	0.058*
education								(0.008)	(0.033)
any	0.77	0.81	-0.006	0.041*					
			(0.006)	(0.025)					
primary	0.76	0.80	-0.004	0.029					
			(0.006)	(0.024)					
middle	0.25	0.33	-0.004	-0.038					
			(0.007)	(0.027)					
high	0.12	0.16	-0.002	-0.037					
			(0.006)	(0.024)					
adult literacy center	0.06	0.12	0.005	0.008					
			(0.015)	(0.061)					

Notes: The table gives the results of the second stage regression using model (4). Columns (3)-(4) and (7)-(8) give the coefficients on the Congress dummy for regressions with the indicated public good as the left-hand variable. Covariates are those included in the baseline regressions, as well as controls for the 1991 level of the indicated public good. Error terms are iid.

Table 1.7: Congress Victory and Public Goods, with Controls

outcome variable	Congress Victory IV (1)	(2)	(3)	(4)	outcome variable	IV (5)	(6)	(7)	(8)
drinking water					**health facilities**				
any	-0.002	0.001	-0.001	-0.001	health centers	-0.005	-0.008	-0.005	-0.005
	(0.009)	(0.009)	(0.008)	(0.009)		(0.011)	(0.012)	(0.011)	(0.011)
tap	0.198**	0.179**	0.210***	0.219**	primary health centers	0.012	0.013	0.011	0.010
	(0.080)	(0.085)	(0.081)	(0.082)		(0.016)	(0.018)	(0.016)	(0.017)
well	-0.217**	-0.212**	-0.219**	-0.226**	health subcenter	-0.056	-0.059	-0.060	-0.048
	(0.095)	(0.105)	(0.095)	(0.096)		(0.047)	(0.052)	(0.047)	(0.047)
hand pump	0.128**	0.146**	0.124**	0.140**	maternity-child	-0.027	-0.037	-0.027	-0.021
	(0.063)	(0.070)	(0.062)	(0.064)		(0.029)	(0.032)	(0.029)	(0.029)
tubewell	-0.124	-0.128	-0.115	-0.088	hospital	0.009	0.010	0.008	0.008
	(0.085)	(0.093)	(0.084)	(0.083)		(0.033)	(0.036)	(0.033)	(0.033)
river	0.017	0.014	0.016	0.026	dispensary	-0.024	-0.017	-0.022	-0.026
	(0.033)	(0.036)	(0.033)	(0.033)		(0.027)	(0.030)	(0.027)	(0.028)
electrification					**irrigation**				
any	0.018	0.042	0.022	0.009	any	0.040	0.079	0.040	0.037
	(0.039)	(0.043)	(0.039)	(0.039)		(0.054)	(0.061)	(0.054)	(0.054)
domestic	0.017	0.041	0.021	0.011	government canals	0.088*	0.123**	0.097*	0.086
	(0.042)	(0.047)	(0.042)	(0.042)		(0.052)	(0.059)	(0.052)	(0.052)
agricultural	-0.147**	-0.131**	-0.147**	-0.158**	private canals	-0.003	-0.001	-0.002	-0.002
	(0.060)	(0.065)	(0.060)	(0.061)		(0.005)	(0.006)	(0.005)	(0.005)
industrial	-0.132*	-0.114	-0.126*	-0.121*	tank	0.012	0.013	0.012	0.004
	(0.070)	(0.076)	(0.069)	(0.069)		(0.020)	(0.022)	(0.020)	(0.020)
comm and trans					tubewell (electrified)	-0.002	-0.002	-0.003	0.008
post office	-0.026	-0.031	-0.027	-0.018		(0.036)	(0.039)	(0.036)	(0.036)
	(0.047)	(0.051)	(0.047)	(0.047)	tubewell (non-elec)	0.013	0.031	0.012	0.010
telegraph	-0.001	0.004	-0.000	-0.002		(0.030)	(0.033)	(0.030)	(0.030)
	(0.014)	(0.015)	(0.013)	(0.014)	well (electrified)	0.004	0.002	0.004	0.010
phones	-0.142*	-0.132	-0.142*	-0.133*		(0.027)	(0.030)	(0.027)	(0.027)
	(0.075)	(0.082)	(0.075)	(0.075)	well (non-elec)	0.014	0.014	0.014	0.014
paved roads	-0.047	-0.052	-0.043	-0.043		(0.015)	(0.017)	(0.015)	(0.015)
	(0.043)	(0.047)	(0.042)	(0.043)	uncultivated	0.058*	0.061*	0.054*	0.053
education						(0.033)	(0.037)	(0.033)	(0.033)
any	0.041*	0.047*	0.040	0.044*					
	(0.025)	(0.028)	(0.025)	(0.026)					
primary	0.029	0.036	0.028	0.032					
	(0.024)	(0.027)	(0.024)	(0.025)					
middle	-0.038	-0.037	-0.038	-0.030					
	(0.027)	(0.030)	(0.027)	(0.027)					
high	-0.037	-0.037	-0.035	-0.032					
	(0.024)	(0.027)	(0.024)	(0.024)					
adult literacy	0.008	0.020	0.005	0.006					
	(0.061)	(0.067)	(0.061)	(0.062)					
brahmins	no	yes	no	no		no	yes	no	no
caste/rel fragm	no	no	yes	no		no	no	yes	no
zamindar	no	no	no	yes		no	no	no	yes

Notes: The table gives the coefficients on the Congress dummy from the second stage regression using model (4), with the left-hand variable being the indicated public good. Each column includes the indicated control variables, as well as those included in the baseline regressions. Error terms are iid.

Table 1.8: Congress Victory and Public Goods: Alternative First-Stage

	Congress Victory								
	OLS	IV				OLS	IV		
outcome variable		Model (2) full sample	Model (1) full sample	Model (2) 5 states	outcome variable		Model (2) full sample	Model (1) full sample	Model (2) 5 states
	(1)	(2)	(3)	(4)		(6)	(7)	(8)	(9)
drinking water					**health facilities**				
any	-0.000	-0.002	-0.007	-0.007	health center	-0.001	-0.005	-0.008	0.001
	(0.002)	(0.009)	(0.010)	(0.008)		(0.003)	(0.011)	(0.012)	(0.008)
tap	-0.006	0.198**	0.295***	0.288***	primary health center	0.007*	0.012	0.024	0.007
	(0.018)	(0.080)	(0.101)	(0.100)		(0.004)	(0.016)	(0.019)	(0.013)
well	-0.028	-0.217**	-0.284**	-0.301***	health subcenter	-0.002	-0.056	-0.058	-0.011
	(0.022)	(0.095)	(0.111)	(0.111)		(0.012)	(0.047)	(0.052)	(0.030)
hand pump	0.021	0.128**	0.043	0.069	maternity-child	0.013*	-0.027	-0.033	-0.020
	(0.015)	(0.063)	(0.066)	(0.058)		(0.007)	(0.029)	(0.032)	(0.023)
tube well	-0.018	-0.124	-0.142	-0.102	hospital	0.006	0.009	0.013	0.001
	(0.021)	(0.085)	(0.095)	(0.087)		(0.008)	(0.033)	(0.037)	(0.005)
river	-0.000	0.017	-0.016	0.006	dispensary	-0.002	-0.024	-0.000	-0.007
	(0.008)	(0.033)	(0.036)	(0.028)		(0.007)	(0.027)	(0.030)	(0.008)
electrification					**irrigation**				
any	-0.011	0.018	-0.005	0.006	any	-0.030**	0.040	0.067	0.082
	(0.010)	(0.039)	(0.043)	(0.041)		(0.013)	(0.054)	(0.062)	(0.069)
domestic	-0.017	0.017	-0.002	0.009	government canal	-0.004	0.088*	0.061	0.041
	(0.011)	(0.042)	(0.046)	(0.048)		(0.012)	(0.052)	(0.056)	(0.048)
agricultural	-0.023	-0.147**	-0.177**	-0.170**	private canal	0.001	-0.003	-0.014**	-0.007
	(0.014)	(0.060)	(0.070)	(0.069)		(0.001)	(0.005)	(0.006)	(0.006)
industrial	-0.013	-0.132*	-0.178**	-0.141*	tank	0.006	0.012	0.023	-0.004
	(0.017)	(0.070)	(0.081)	(0.078)		(0.005)	(0.020)	(0.023)	(0.008)
comm and transp					tubewell (electrified)	-0.015*	-0.002	0.032	0.004
post office	0.012	-0.026	0.006	-0.029		(0.009)	(0.036)	(0.041)	(0.034)
	(0.011)	(0.047)	(0.052)	(0.032)	tubewell (non-elec)	-0.008	0.013	0.011	0.041
telegraph	0.001	-0.001	-0.006	-0.005		(0.008)	(0.030)	(0.033)	(0.044)
	(0.003)	(0.014)	(0.015)	(0.005)	well (electrified)	0.012*	0.004	-0.001	0.018
telephone	-0.026	-0.142*	-0.108	-0.018		(0.007)	(0.027)	(0.030)	(0.035)
	(0.018)	(0.075)	(0.081)	(0.066)	well (non-elec)	-0.010***	0.014	0.001	0.007
paved roads	-0.013	-0.047	-0.052	-0.028		(0.004)	(0.015)	(0.016)	(0.021)
	(0.011)	(0.043)	(0.047)	(0.040)	uncultivated	0.007	0.058*	0.057	0.053
education						(0.008)	(0.033)	(0.037)	(0.035)
any	-0.006	0.041*	0.032	0.056*					
	(0.006)	(0.025)	(0.027)	(0.030)					
primary	-0.004	0.029	0.024	0.040					
	(0.006)	(0.024)	(0.026)	(0.027)					
middle	-0.004	-0.038	-0.035	-0.020					
	(0.007)	(0.027)	(0.030)	(0.022)					
high	-0.002	-0.037	-0.041	-0.012					
	(0.006)	(0.024)	(0.027)	(0.014)					
adult literacy center	0.005	0.008	-0.023	0.052					
	(0.015)	(0.061)	(0.067)	(0.059)					

Notes: The table gives the coefficients on the Congress dummy using model (4) as the second-stage specification, and the indicated public good as the left-hand variable. Columns (2) and (7) use model (1) in the first stage, which includes only the uninteracted assassination dummy; columns (3)-(4) and (8)-(9) use model (2), which includes both the assassination dummy and its interaction with the absolute value of the party's prior vote margin. Columns (4) and (9) limit the sample to the 5 states holding election both before and after the assassination. Covariates are those included in the baseline regressions. Error terms are iid.

Table 1.9: First Stage: Assassination, Electoral Outcomes, and Incumbency

Outcome: Congress Victory 1991	non-incumbent		incumbent	
	(1)	(2)	(3)	(4)
Panel A: Model (1)				
post-assassin	0.219***	0.165***	0.365***	0.398***
	(0.055)	(0.053)	(0.071)	(0.087)
F-stat	15.758	9.785	26.703	21.113
R-squared	0.092	0.535	0.306	0.470
N	279	279	170	170
Panel B: Model (2)				
post-assassin	0.303***	0.233***	0.486***	0.530***
	(0.096)	(0.084)	(0.103)	(0.111)
post-assn X abs(prior margin)	-0.005	-0.004	-0.011	-0.013*
	(0.005)	(0.004)	(0.007)	(0.007)
F-stat	10.031	7.642	22.221	22.773
R-squared	0.096	0.537	0.317	0.482
N	279	279	170	170
state FEs	no	yes	no	yes

Notes: The table gives the estimates from the first stage regression. Columns (1) and (2) show the estimates from the sample of constituencies in which Congress was not the incumbent party, and column (3)-(4) from the sample of constituencies in which Congress was the incumbent party. Covariates are those included in the baseline regressions. Error terms are iid.

Table 1.10: Congress Victory and Pro-Poor Public Goods: Incumbency Disaggregation

Outcome: Public Good 2001 (sd)						
	Bardhan and Mookherjee			alternative		
	OLS	IV		OLS	IV	
		Model (2)	Model (1)		Model (2)	Model (1)
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Non-Incumbents						
Congress	-0.102***	-0.500***	-0.616***	0.000	-0.384**	-0.431**
	(0.033)	(0.188)	(0.216)	(0.026)	(0.162)	(0.178)
Congress X pro-poor	0.116***	0.532***	0.568***	-0.093***	0.587**	0.613**
	(0.035)	(0.198)	(0.219)	(0.032)	(0.255)	(0.274)
R-squared	0.747	0.737	0.731	0.694	0.671	0.668
N	2790	2790	2790	4185	4185	4185
Panel A: Incumbents						
Congress	-0.131***	-0.378***	-0.358***	-0.047	-0.211**	-0.240**
	(0.042)	(0.130)	(0.137)	(0.038)	(0.102)	(0.108)
Congress X pro-poor	0.177***	0.664***	0.649***	0.030	0.305**	0.361**
	(0.064)	(0.187)	(0.207)	(0.070)	(0.150)	(0.173)
R-squared	0.836	0.829	0.830	0.731	0.729	0.729
N	1690	1690	1690	2535	2535	2535

Notes: The table gives the results of the second stage regression using model (3). Panel A gives the estimates using only the sample of constituencies in which Congress was not the incumbent party; panel B gives the estimate using the sample where Congress was the incumbent party. The results are given for both the Bardhan and Mookherjee classification and our alternative classification. Columns (4) and (9) show the results using model (2) as the first-stage specification, where both the assassination dummy and its interaction with the prior vote margin are included are included. Columns (5) and (10) use model (1) as the first-stage specification, with only the un-interacted assassination dummy included. Covariates are those included in the baseline regressions. Error terms are clustered at the constituency level.

Table 1.11: Congress Victory and Public Goods: Incumbency

	Congress Victory					
	IV			IV		
outcome variable	all	non-incumb	incumbent	all	non-incumb	incumbent
	(1)	(2)	(3)	(4)	(5)	(6)
drinking water				**health facilities**		
any	-0.002	-0.000	-0.002	health center	-0.005	-0.002	-0.009
	(0.009)	(0.014)	(0.010)		(0.011)	(0.012)	(0.017)
tap	0.198**	0.221*	0.197**	primary health center	0.012	0.010	0.020
	(0.080)	(0.127)	(0.095)		(0.016)	(0.020)	(0.024)
well	-0.217**	-0.452**	-0.051	health subcenter	-0.056	0.027	-0.150**
	(0.095)	(0.199)	(0.100)		(0.047)	(0.053)	(0.073)
hand pump	0.128**	0.057	0.177***	maternity-child	-0.027	-0.065	0.008
	(0.063)	(0.102)	(0.067)		(0.029)	(0.051)	(0.033)
tube well	-0.124	-0.150	-0.035	hospital	0.009	-0.005	0.034
	(0.085)	(0.126)	(0.108)		(0.033)	(0.011)	(0.056)
river	0.017	0.005	0.052	dispensary	-0.024	-0.021	-0.027
	(0.033)	(0.051)	(0.041)		(0.027)	(0.042)	(0.034)
electrification				**irrigation**		
any	0.018	-0.004	0.003	any	0.040	0.037	0.076
	(0.039)	(0.075)	(0.024)		(0.054)	(0.095)	(0.056)
domestic	0.017	-0.042	0.029	government canal	0.088*	0.105	0.119
	(0.042)	(0.079)	(0.030)		(0.052)	(0.082)	(0.076)
agricultural	-0.147**	-0.265**	-0.002	private canal	-0.003	-0.011	0.007
	(0.060)	(0.122)	(0.064)		(0.005)	(0.009)	(0.006)
industrial	-0.132*	-0.375**	0.085	tank	0.012	0.020	0.002
	(0.070)	(0.154)	(0.073)		(0.020)	(0.027)	(0.028)
comm and transp				tubewell (electrified)	-0.002	0.032	-0.043
post office	-0.026	-0.004	-0.034		(0.036)	(0.071)	(0.026)
	(0.047)	(0.061)	(0.053)	tube well (non-elec)	0.013	0.040	-0.005
telegraph	-0.001	0.004	-0.007		(0.030)	(0.066)	(0.017)
	(0.014)	(0.009)	(0.023)	well (electrified)	0.004	-0.036	0.041
telephone	-0.142*	-0.085	-0.198**		(0.027)	(0.054)	(0.030)
	(0.075)	(0.115)	(0.094)	well (non-elec)	0.014	-0.001	0.024**
paved roads	-0.047	-0.062	-0.105**		(0.015)	(0.028)	(0.011)
	(0.043)	(0.070)	(0.052)	uncultivated	0.058*	0.119**	0.008
education					(0.033)	(0.056)	(0.044)
any	0.041*	0.009	0.057*				
	(0.025)	(0.039)	(0.031)				
primary	0.029	-0.022	0.059*				
	(0.024)	(0.039)	(0.032)				
middle	-0.038	-0.081*	-0.018				
	(0.027)	(0.045)	(0.035)				
high	-0.037	-0.037	-0.022				
	(0.024)	(0.036)	(0.027)				
adult literacy center	0.008	0.017	0.010				
	(0.061)	(0.077)	(0.093)				

Notes: The table gives the coefficients on the Congress dummy from the second-stage regression using model (4), with the left-hand variable being the indicated public good. Columns (2) and (5) give results using the sample of constituencies in which Congress was not the incumbent party; and Columns (3) and (6) the sample of constituencies in which it was the incumbent party. Covariates are those included in the baseline regressions. Error terms are iid.

Table 1.12: Regression Discontinuity: Balance

	optimal bw		optimal bw	full sample
	lost	won	linear	quartic
	(1)	(2)	(3)	(4)
cities				
urbanization	0.233	0.220	-0.073	-0.042
			(0.133)	(0.055)
workers				
cultivators	0.084	0.065	-0.051	-0.003
			(0.042)	(0.019)
agricultural labor	0.125	0.090	-0.077	-0.027
			(0.065)	(0.024)
forestry	0.019	0.021	0.015	-0.002
			(0.020)	(0.006)
mining	0.003	0.019	-0.029**	-0.004
			(0.012)	(0.017)
manufacturing (hh)	0.030	0.103	-0.036	0.025
			(0.169)	(0.018)
manufacturing (non-hh)	0.150	0.161	0.033	0.005
			(0.058)	(0.029)
construction	0.050	0.049	0.010	-0.000
			(0.021)	(0.006)
trade	0.212	0.216	0.033	0.017
			(0.038)	(0.016)
transportation	0.080	0.073	0.022	-0.004
			(0.038)	(0.010)
other	0.246	0.223	0.016	-0.008
			(0.067)	(0.024)
marginal workers	0.041	0.025	-0.050	-0.008
			(0.030)	(0.007)
elections				
victory 1989	0.312	0.577	0.231	0.108
			(0.167)	(0.121)
vote share 1989	39.712	42.224	-0.356	-1.078
			(2.259)	(2.748)
election margin 1989	-7.940	-0.981	-0.405	-2.001
			(3.435)	(4.754)
close election 1989	0.469	0.423	-0.209	-0.124
			(0.220)	(0.160)
ethnicity				
brahmins	0.046	0.044	-0.019	0.000
			(0.018)	(0.008)
muslims	0.070	0.105	0.058	0.023
			(0.043)	(0.022)
sikhs	0.044	0.040	-0.003	0.006
			(0.009)	(0.012)
scheduled castes/tribes	0.214	0.232	0.095	0.035
			(0.069)	(0.041)
caste/religious fragmentation	0.789	0.860	-0.077	-0.006
			(0.106)	(0.044)
geography				
steep/sloping	0.003	0.000	0.000	0.001
			(0.000)	(0.001)
barren/rocky	0.005	0.003	-0.010*	-0.002
			(0.004)	(0.002)
princely states	0.412	0.352	-0.041	-0.132
			(0.176)	(0.087)
zamindar	0.438	0.379	0.069	-0.014
			(0.159)	(0.098)

Notes: Columns (1) and (2) give the characteristics of the constituencies located within the optimal bandwidth around the win/loss threshold as determined using Imbens and Kalyanaraman (2009). Column (3) gives the difference at the discontinuity as determined by a regression of the indicated variable on a dummy for Congress victory and including a linear in the Congress vote margin estimated separately for each side of the win/loss threshold, using the sample of constituencies within the optimal bandwidth. Column (4) uses the full sample and includes a quartic in the 1991 vote margin estimated separately for each side of the threshold.

Table 1.13: Regression Discontinuity: Pro-Poor Public Goods

Outcome: Public Good 2001 (sd)				
	Bardhan and Mookherjee		alternative	
	optimal bw linear (1)	full sample quartic (2)	optimal bw linear (3)	full sample quartic (4)
Congress	-0.032	-0.148	-0.002	-0.027
	(0.229)	(0.097)	(0.181)	(0.070)
Congress X pro-poor	-0.048	0.199	0.041	0.148
	(0.257)	(0.123)	(0.278)	(0.132)
R-squared	0.820	0.785	0.724	0.708
N	360	4480	540	6720

Notes: This table gives the results for regressions using model (5). Columns (1) and (3) include a local linear in the Congress vote share, estimated separately for pro-poor and non-pro-poor public goods; and limit the sample to those constituencies within the optimal bandwidth around the win/loss threshold. Columns (2) and (4) include the full sample of constituencies, and quartic polynomials. Columns (1)-(2) use the Bardhan and Mookherjee (2011) classification, and columns (3)-(4) the alternative classification. Covariates are those included in the baseline regressions. Optimal bandwidths are estimated using Imbens and Kalyanaraman (2009). Error terms are clustered at the constituency level.

Table 1.14: Regression Discontinuity: Congress Victory and Public Goods

outcome variable	optimal bw lost	optimal bw won	Congress Victory optimal bw linear	Congress Victory full sample quartic	outcome variable	optimal bw lost	optimal bw won	Congress Victory optimal bw linear	Congress Victory full sample quartic
	(1)	(2)	(3)	(4)		(5)	(6)	(7)	(8)
drinking water					**health facilities**				
any	0.001	-0.000	0.006	-0.011**	health center	0.020	0.026	0.011	-0.005
			(0.011)	(0.006)				(0.019)	(0.007)
tap	0.184	0.212	-0.155	-0.022	primary health center	0.035	0.066	-0.024	0.009
			(0.095)	(0.046)				(0.052)	(0.011)
well	0.000	-0.047	-0.021	-0.026	health subcenter	0.175	0.122	0.005	-0.029
			(0.118)	(0.057)				(0.065)	(0.030)
hand pump	0.266	0.229	0.035	0.061	maternity-child	0.045	0.035	-0.047	-0.017
			(0.064)	(0.039)				(0.065)	(0.018)
tubewell	0.003	0.080	-0.007	0.004	hospital	0.056	0.114	0.028	0.017
			(0.080)	(0.055)				(0.053)	(0.022)
river	0.022	0.042	-0.039	-0.008	dispensary	0.001	-0.009	-0.013	-0.011
			(0.042)	(0.022)				(0.055)	(0.018)
electrification					**irrigation**				
any	0.085	0.040	-0.006	-0.010	any	0.123	0.100	-0.007	-0.007
			(0.037)	(0.025)				(0.057)	(0.034)
domestic	0.101	0.081	-0.024	-0.002	government canal	0.051	0.040	0.009	0.013
			(0.036)	(0.028)				(0.065)	(0.030)
agricultural	0.145	0.105	0.038	0.027	private canal	-0.000	0.006	-0.014	-0.001
			(0.069)	(0.037)				(0.000)	(0.003)
industrial	0.223	0.214	-0.015	0.048	tank	0.021	-0.004	-0.022	-0.018
			(0.055)	(0.043)				(0.084)	(0.013)
comm and transp					tubewell (electrified)	0.023	0.009	0.017	0.014
post office	0.005	0.022	0.058*	0.006				(0.025)	(0.024)
			(0.030)	(0.028)	tube well (non-elec)	0.001	0.011	0.012	0.009
telegraph	0.020	0.027	0.020	0.007				(0.030)	(0.020)
			(0.014)	(0.009)	well (electrified)	0.018	0.032	-0.012	0.012
telephones	0.401	0.381	-0.014	0.047				(0.030)	(0.018)
			(0.096)	(0.046)	well (non-elec)	-0.007	-0.001	0.003	-0.006
paved roads	0.173	0.072	-0.107	-0.068**				(0.010)	(0.010)
			(0.065)	(0.028)	uncultivated	0.003	-0.010	-0.011	-0.017
education								(0.036)	(0.021)
any	0.041	0.029	-0.009	-0.016					
			(0.036)	(0.015)					
primary	0.060	0.045	-0.018	-0.020					
			(0.039)	(0.015)					
middle	0.096	0.090	-0.050	-0.015					
			(0.039)	(0.018)					
high	0.039	0.052	0.056**	0.006					
			(0.020)	(0.015)					
adult literacy	0.068	0.113	-0.009	0.067*					
			(0.132)	(0.039)					

Notes: Columns (1)-(2) and (5)-(6) give the change between 1991 and 2001 in the indicated public good across the win/loss threshold within the optimal bandwidth. Columns (3) and (7) give the coefficient on the Congress dummy using a local linear in the Congress party's 1991 vote margin on the sub-sample within the optimal bandwidth of the win/loss threshold. Columns (4) and (8) use the full sample, including a quartic in Congress party's 1991 vote margin. Covariates are those included in the baseline regressions. Optimal bandwidths are estimated using Imbens and Kalyanaraman (2009). Error terms are iid.

Table 1.15: Congress Victory and Public Goods: All Identification Strategies

	Congress Victory					
	1991 election			RDs and later elections		
outcome variable	OLS	IV	RD	1996	1998	1999
	(1)	(2)	(3)	(4)	(5)	(6)
tap (drinking water)	-0.006	0.198**	-0.022	-0.040	-0.041	-0.133***
	(0.018)	(0.080)	(0.046)	(0.048)	(0.050)	(0.051)
well (drinking water)	-0.028	-0.217**	-0.026	-0.080	-0.077	0.054
	(0.022)	(0.095)	(0.057)	(0.058)	(0.059)	(0.061)
hand pump (drinking water)	0.021	0.128**	0.061	-0.008	0.009	0.001
	(0.015)	(0.063)	(0.039)	(0.040)	(0.041)	(0.042)
agricultural electrification	-0.023	-0.147**	0.027	-0.019	0.011	0.020
	(0.014)	(0.060)	(0.037)	(0.037)	(0.038)	(0.039)
industrial electrification	-0.013	-0.132*	0.048	-0.020	-0.018	-0.067
	(0.017)	(0.070)	(0.043)	(0.044)	(0.045)	(0.046)
telephone	-0.026	-0.142*	0.047	-0.054	-0.036	0.002
	(0.018)	(0.075)	(0.046)	(0.047)	(0.049)	(0.050)
paved roads	-0.013	-0.047	-0.068**	-0.007	-0.019	0.019
	(0.011)	(0.043)	(0.028)	(0.029)	(0.029)	(0.030)
adult literacy center	0.005	0.008	0.067*	-0.006	0.010	0.047
	(0.015)	(0.061)	(0.039)	(0.040)	(0.041)	(0.042)
health center	-0.001	-0.005	-0.005	0.013*	-0.003	0.003
	(0.003)	(0.011)	(0.007)	(0.007)	(0.008)	(0.008)
hospital	0.006	0.009	0.017	0.044**	0.010	-0.036
	(0.008)	(0.033)	(0.022)	(0.022)	(0.023)	(0.023)
irrigation	-0.030**	0.040	-0.007	-0.054	-0.024	0.010
	(0.013)	(0.054)	(0.034)	(0.035)	(0.036)	(0.037)
government canal	-0.004	0.088*	0.013	-0.028	-0.003	-0.022
	(0.012)	(0.052)	(0.030)	(0.031)	(0.032)	(0.033)

Notes: The table gives the coefficients on the Congress dummy using each identification strategy, with the indicated public good as the left-hand variable. RDs are estimated with dummies for Congress victory in the indicated years, and including quartics in the the party's vote margin. Covariates are those included in the baseline regressions. Error terms are iid.

Table 1.16: Incumbency Advantage

Outcome: Congres Victory 1996	OLS				IV		RD	
	pre-assassin		full sample					
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Congress Incumbent	0.249***	0.218***	0.253***	0.192***	0.210	0.167	-0.083	-0.095
	(0.074)	(0.079)	(0.049)	(0.051)	(0.207)	(0.206)	(0.130)	(0.130)
N	206	206	449	449	449	449	449	449
R-squared	0.343	0.360	0.291	0.323	0.290	0.323	0.355	0.366
1989 controls	no	yes	no	yes		yes	no	yes

Notes: The table give the results of regressions of 1996 Congress victory on a dummy for victory in the 1991 election. Columns (1)-(2) use only the sample of constituencies voting before the assassination; columns (3) and (4) the full sample of constituencies. The RD uses the full sample of constituencies, and includes quartics in the 1991 vote margin. Covariates are those included in the baseline regressions. Error terms are iid.

Table 1.17: Swing and Core Constituencies

outcome variable	Congress Victory	swing	core (> 20)	swing	core (won all)	outcome variable	Congress Victory	swing	core (> 20)	swing	core (won all)
	(1)	(2)	(3)	(4)	(5)		(6)	(7)	(8)	(9)	(10)
drinking water						**health facilities**					
any	-0.000	0.003*	0.008***	0.002	0.003	health center	-0.001	-0.002	-0.001	-0.002	-0.002
	(0.002)	(0.002)	(0.003)	(0.002)	(0.003)		(0.003)	(0.003)	(0.004)	(0.003)	(0.004)
tap	-0.006	0.015	0.044*	0.008	-0.015	primary health center	0.007*	0.006	0.002	0.006	-0.008
	(0.018)	(0.017)	(0.024)	(0.017)	(0.024)		(0.004)	(0.004)	(0.006)	(0.004)	(0.005)
well	-0.028	0.012	-0.007	0.014	0.011	health subcenter	-0.002	0.009	-0.002	0.010	-0.004
	(0.022)	(0.021)	(0.030)	(0.021)	(0.029)		(0.012)	(0.011)	(0.015)	(0.011)	(0.015)
hand pump	0.021	-0.006	0.034*	-0.011	0.012	maternity-child	0.013*	0.000	0.002	0.000	0.010
	(0.015)	(0.014)	(0.020)	(0.014)	(0.020)		(0.007)	(0.007)	(0.009)	(0.007)	(0.009)
tube well	-0.018	0.002	0.000	0.003	0.014	hospital	0.006	0.011	0.001	0.010	-0.014
	(0.021)	(0.020)	(0.028)	(0.020)	(0.028)		(0.008)	(0.008)	(0.011)	(0.008)	(0.011)
river	-0.000	0.008	0.024**	0.004	-0.010	dispensary	-0.002	0.006	-0.002	0.006	-0.004
	(0.008)	(0.008)	(0.011)	(0.008)	(0.011)		(0.007)	(0.007)	(0.009)	(0.006)	(0.009)
electrification						**irrigation**					
any	-0.011	-0.009	-0.014	-0.007	0.001	any	-0.030**	0.008	-0.002	0.009	0.004
	(0.010)	(0.009)	(0.013)	(0.009)	(0.013)		(0.013)	(0.013)	(0.017)	(0.012)	(0.017)
domestic	-0.017	-0.005	-0.017	-0.003	-0.013	government canal	-0.004	0.017	-0.011	0.018*	0.004
	(0.011)	(0.010)	(0.014)	(0.010)	(0.014)		(0.012)	(0.011)	(0.015)	(0.011)	(0.015)
agricultural	-0.023	0.013	-0.017	0.016	0.025	private canal	0.001	0.001	0.002	0.001	0.002
	(0.014)	(0.014)	(0.019)	(0.013)	(0.018)		(0.001)	(0.001)	(0.002)	(0.001)	(0.002)
industrial	-0.013	0.007	0.012	0.006	0.013	tank	0.006	0.003	-0.003	0.004	0.022***
	(0.017)	(0.016)	(0.022)	(0.015)	(0.022)		(0.005)	(0.005)	(0.007)	(0.005)	(0.006)
comm and transp						tubewell (electrified)	-0.015*	-0.011	0.001	-0.012	-0.010
post office	0.012	0.004	0.030**	-0.000	0.006		(0.009)	(0.009)	(0.012)	(0.009)	(0.012)
	(0.011)	(0.010)	(0.014)	(0.010)	(0.014)	tube well (non-elec)	-0.008	-0.002	-0.011	-0.001	-0.009
telegraph	0.001	0.001	0.005	0.000	-0.006		(0.008)	(0.007)	(0.010)	(0.007)	(0.010)
	(0.003)	(0.003)	(0.005)	(0.003)	(0.004)	well (electrified)	0.012*	-0.008	0.029***	-0.012*	0.005
telephone	-0.026	0.046***	0.034	0.039**	-0.034		(0.007)	(0.007)	(0.009)	(0.006)	(0.009)
	(0.018)	(0.017)	(0.023)	(0.017)	(0.023)	well (non-elec)	-0.010***	0.001	-0.011**	0.002	0.002
paved roads	-0.013	-0.014	0.010	-0.015	-0.009		(0.004)	(0.004)	(0.005)	(0.003)	(0.005)
	(0.011)	(0.010)	(0.014)	(0.010)	(0.014)	uncultivated	0.007	-0.008	-0.013	-0.006	0.014
education							(0.008)	(0.008)	(0.011)	(0.008)	(0.011)
any	-0.006	0.002	-0.010	0.003	-0.012						
	(0.006)	(0.006)	(0.008)	(0.006)	(0.008)						
primary	-0.004	0.005	-0.007	0.006	-0.013*						
	(0.006)	(0.006)	(0.008)	(0.006)	(0.008)						
middle	-0.004	0.011*	0.015*	0.008	-0.010						
	(0.007)	(0.007)	(0.009)	(0.006)	(0.009)						
high	-0.002	0.003	0.018**	-0.000	0.000						
	(0.006)	(0.006)	(0.008)	(0.005)	(0.008)						
adult literacy center	0.005	-0.016	0.003	-0.016	0.018						
	(0.015)	(0.014)	(0.020)	(0.014)	(0.020)						

Notes: The results come from OLS regressions, with dummies for core and swing constituencies. Columns (2)-(3) and (7)-(8) have core constituencies defined as those in which Congress won by a margin greater than 20 ppts; columns (4)-(5) and (9)-(10) have them defined as those in which Congress won all 4 elections between 1980 and 1991. In both specifications, swing constituencies are defined as those in which the party won or lost by a margin of less than 5. Covariates are those included in the baseline regressions. Error terms are iid.

Chapter 2

Propaganda and Ethno-Religious Politics in Developing Countries: Evidence from India

2.1 Introduction

2.1.1 Overview

Political propaganda is widely perceived to play an important role in shaping public opinion and political and policy outcomes. Ethno-religious themes have played a substantial role in the design of such campaigns; developing countries in particular – where there exist higher levels of ethnic heterogeneity, and where the allocation of patronage and public goods is more discretionary, and therefore dependent on political outcomes – are attractive settings for the mobilization of ethno-religious identities for political gain (Fearon, 1999). In this paper, I analyze the effects of a notable ethno-religious campaign in India prior to the 1991 national elections. The character of this campaign was one of politico-religious exhortation, with the intent of of increasing the salience of Hindu identity through a fusing of traditional religious themes with contemporary political concerns.

Voter behavior is highly responsive to the messages disseminated through political campaigns and media framing. Voters are substantially more likely to participate in elections after being visited by campaign workers (Green *et al.*, 2003).[1] Voters in India exposed to a campaign exhorting them to vote based on policy rather than caste identity are more likely to vote, less likely to vote for their caste preferred party, and less likely to vote for politicians who are corrupt (Banerjee *et al.*, 2009).[2] Clientelistic campaign appeals can be effective in increasing vote shares, though the effect is stronger amongst men, with women being more

[1]The authors study the effects of six campaigns in different American cities encouraging voter participation through door-to-door canvassing. The mean effect of the six campaigns is a 7.1 percentage points increase in the probability of voting.

[2]The campaign was conducted in Uttar Pradesh's state elections, and consisted of an exhortation to "vote on issues, not on caste." This campaign led to an 11 percentage points increase in the probability of vote, and a 10 percentage points decline in the probability of supporting the caste preferred party. (It should be noted that the campaign may have been perceived by villagers as an exhortation against the caste parties themselves, rather than caste voting in general, which would give the results a slightly different interpretation.)

receptive to appeals based on national public policy (Wantchekon, 2003).[3] Media framing too can exert substantial influence over political outcomes, with voters being more likely to vote for parties aligned with the biases of of the media outlets to which they are exposed (DellaVigna and Kaplan, 2007; Gerber *et al.*, 2006).[4]

Ethnic identity represents a potentially potent instrument for influencing voter behavior, particularly in developing countries, where societies are characterized by greater levels of ethno-linguistic heterogeneity. Identity-based appeals are both rendered more efficacious by the presence of pre-existing ethnic cleavages, and simultaneously can have the effect of increasing the salience of those very identities.[5] During close elections, the salience of ethnic identity relative to other ascriptive identities such as class and gender, has been found to increase, presumably due to a combination of political exhortation and perceived voter self-interest (Eifert *et al.*, 2008).[6] Where ethno-linguistic groupings are large enough to be decisive in electoral politics, even closely related groups can find themselves accentuating their differences with one another, where in less politicized contexts their differences are

[3]Wantchekon (2003) randomized the campaign messages of parties in national elections in Benin, with some villages receiving a clientelist message, others a public policy message, while villages not randomized into either group being used as the control.

[4]DellaVigna and Kaplan (2007) describe the effects of Fox News in increasing support for the Republican Party in the 2000 US national elections, with the Party seeing an 0.4 to 0.7 percentage points increase in vote share in districits exposed to the Fox News Cable channel. For identification, the authors use the differential availability of Fox News due to the timing of contracts being signed with local service providers. Gerber *et al.* (2006) show that households randomly given subscriptions to the Washington Post, which has a Democratic orientation, increases the probability that the recipient votes for the Democratic candidate by 8 to 11 percentage points.

[5]An influential literature explores the ways in which ethnic identity is made more salient by the operation of political and historical forces. Factors such as colonial intervention (Laitin, 1986; Young, 1994), and the formation of minimum winning coalitions (Fearon, 1999; Posner, 2004), have been invoked to explain observed ethnic cleavages. Posner (2004) provides a discussion of this literature.

[6]Using the Afro-barometer data set across a series of election in ten African countries from 1999-2004, Eifert *et al.* (2008) find that individuals in the run-up to closely fought elections tend to emphasize their ethnic identity, as opposed to gender, professional, and class identities, when asked to choose among the offered identities the one most salient to them.

deemed minor (Posner, 2004).[7] Where political power in village councils in India is reserved for low-caste groups, individuals become more favorably disposed towards politicians of the same caste but a different sub-caste (Dunning, 2009).[8]

I analyze the effects of a politico-religious campaign in India occurring prior to the 1991 national elections, the purpose of which was to increase the Hindu sentiment of the population, against the rival identities of caste, class, and region. In late 1990, the leader of the Hindu nationalist BJP party undertook a national campaign to garner support for the building of a temple to the god *Ram* in the northern Indian city of Ayodhya. This campaign consisted of the party leader's touring northern India on a *yatra* ("pilgrimage") to the site of the proposed temple, holding numerous rallies along the way of a mixed political and religious character. The route itself was determined largely by the desire to maximize national publicity by passing through large urban agglomerations in key states across northern India. Identification comes through the exposure of voters to the the campaign due to their lying along the route connecting these large urban agglomerations. Constituencies through which the *yatra* pass show a 5-9 ppts increase in the vote share given the BJP, which in turn increased the probability of BJP victory by 10-20 ppts. In addition, Hindu-Muslim riots attributable to the activities of the campaign increase the BJP's vote share by 3.5 ppts.

A second finding of this paper is that local public goods allocations improve in areas visited by the *yatra*. Tap water, electrification, paved roads, telephone access, and primary

[7]Posner (2004) find that the Chewa and Tumbuka tribes have significantly different relations and self-perceptions on opposite sides of the Zambia-Malawi border, which the authors attribute to the different electoral configurations on either side of the border. In Zambia, where the groups jointly constitute a small minority of the total population, differences between them are perceived by individuals to be small and relations are amicable. In Malawi, in contrast, where these groups constitute a significant share of the population, and therefore their separate ethnicities have proven viable for sorting into competing political parties, relations between the groups are acrimonious, and individuals in these tribes perceive their cultural differences to be very large.

[8]In this paper, the author uses an RD design to identify the effects of caste reservation. Not only are individuals in caste-reserved villages more likely to vote for candidates outside their sub-caste, but within their caste, but they also come to view these candidates more favorably in terms of their personal qualities.

education all see improvements, generally on the order of 3-6 ppts. Though this may seem to contradict the well-established result of ethno-linguistic fractionalization lowering the quality of policy outcomes, by de-emphasizing the myriad caste identities in favor of a more homogeneous Hindu identity, the campaign may have had the effect of reducing the effective level of fractionalization.[9] Such an interpretation would be in accord with the results found in Miguel and Gugerty (2005), who show the positive effects of a national versus ethnic identity by a comparison of the disparate abilities of ethnic groups to cooperate with one another in the provision of public goods across the Kenya-Tanzania border.[10]

2.2 Background

2.2.1 Caste and Religion in Indian Politics

India is the locus of a particularly complex array of ascriptive identities. The caste system divides society into thousands of endogamous social groups, cutting across boundaries of religion, region, and class. Regional and linguistic identities figure prominently in Indian society: many states are associated with ethnic groups possessing a distinct language, cultural heritage, and political history. India is also home to multiple religious communities: Hindus, Muslims, Jains, Sikhs, Christians and Buddhists are all prominently represented, with deep cultural roots, and complicated relationships with regional, and even caste, identities.

Since independence, the dominant force in Indian politics has been the Congress party, which under the leadership of Jawaharlal Nehru articulated a secularist ideology that came to constitute a near national "consensus" for the better part of three decades. Regional

[9]With more than 80% of the India's population being Hindu, the ethno-religious identity being promoted by the campaign was one with the potential to mitigate the caste cleavages hindering collective action.

[10]The authors argue that the inability of groups to cooperate for the provision of public goods in Kenya is due to that government's deliberate fomentation of ethnic conflict for electoral advantage; whereas the ability of the same ethnic groups to cooperate just across the border in Tanzania is due to the government's deliberate promotion of a national identity.

parties such as the DMK in Tamil Nadu and the TDP in Andhra Pradesh became influential actors in Indian politics soon after independence, constituting in many states the principal rival to the national Congress party; and have, in recent years, been pivotal in the formation of ruling coalitions in the Central government (Guha, 2007). Since the late-1970s, caste- and religion-based parties have become increasingly important actors in state and national politics. The earlier incarnation of Hindu nationalist politics, the Jana Sangh, had only a marginal presence in Indian politics after independence;[11] the 1980s, however, witnessed the rapid rise of its successor, the Hindu nationalist BJP, which by 1991 had emerged as the Congress party's principal rival for national power. The party's rise was due in no small part to its effectiveness in mobilizing voters around the movement to construct a Hindu temple at the site of the *Babri Masjid* in Ayodhya (Jaffrelot, 1996), of which the campaign studied in this paper represented a particularly important move in bringing the issue to national prominence. These were also important years for caste-based politics, with parties such as the BSP emerging to represent the interests of the marginalized Scheduled Castes; and the Janata party and its various local offshoots representing the interests of the increasingly assertive middling agrarian classes (Jaffrelot, 2003). As a consequence, the nearly uninterrupted authority of the Congress party has been replaced by shifting coalitional formations based on a variety of caste, religious, regional, and ideological parties.

2.2.2 Historical Background and the 1991 Election

The politico-religious campaign studied here – the *Ram Rath Yatra* – was part of a broader movement to build a temple to the god *Ram* at his legendary birthplace in Ayodhya, a town in the northern Indian state of Uttar Pradesh. According to activists, the original temple at the site of his birth was destroyed by the Muslim invader Babur, who in its place built a

[11]This was due largely to Nehru's hostility to sectarianism, as well as the role played by Hindu activists in the assassination of Mahatma Gandhi.

mosque, the eponymous *Babri Masjid*, in 1528. In 1949, a small icon of *Ram* was smuggled into the mosque during the night, after which the mosque was closed off to all worshippers, Hindu and Muslim, for fear that conflict over the site would re-ignite the communal passions that had led to horrific carnage following Partition the previous year. For more than 30 years the issue was largely dormant, until its revival in the mid-1980s by Hindu activists, in large part for the purpose of increasing popular support for the Hindu nationalist movement and its political wing, the BJP. Further aggravating matters, in 1987 the mosque was re-opened by judicial fiat to Hindu worshippers, likely at the behest of Congress leadership, who hoped to fracture the Hindu "vote bank" being cultivated by the BJP (Jaffrelot, 1996).

Throughout the 1980s, a series of campaigns were organized to bring greater attention to the temple issue. A particularly popular tactic was the organization of long-distance processions, wherein party activists would travel between religious sites around the country, holding rallies and ceremonies that blended religious themes with political exhortation (Jaffrelot, 1996; Assayag, 1998). Though successful in bringing attention to the issue, these campaigns failed to move the political or judicial apparatus to sanction the replacement of the mosque with a Hindu temple. Becoming increasingly impatient at the continuing deadlock, Hindu nationalist groups announced that construction of the temple would commence on October 30, 1990, regardless of government consent. In support of this effort, L.K. Advani, then president of the BJP, declared his intention to conduct a *Ram Rath Yatra* ("pilgrimage of *Ram*'s chariot"), traveling in "pilgrimage" across northern India to Ayodhya, where he would arrive on the day designated for construction to begin.

Several factors in Indian society rendered the moment propitious for the *yatra* campaign. During this time there aired a television serial based on the mythology of *Ram*, which became the most popular show in Indian history and helped to give the god a pan-Indian significance previously absent (Lutgendorf, 1990). In addition, 1989 saw the outbreak of

a separatist movement in Muslim-majority Kashmir, supported by India's rival Pakistan,[12] which rendered the population amenable to a political movement castigating the Muslim community and decrying the betrayal of Hindu India by a feckless political elite. Following on the heels of the infamous Shah Bano affair,[13] the narrative of a beleaguered Hindu nation held hostage by its minority communities gained increasing traction in public discourse.

Perhaps most explosive of the controversies roiling Indian society, however, was the announcement on August 7, 1990 by the ruling Janata Dal party that the government would be implementing the recommendations of the Mandal Commission to establish quotas in government employment and higher education for the so-called "Other Backwards Castes" (OBCs).[14] The share to be apportioned the OBCs was 27.5% of the positions in the relevant institutions; added to the 22% already reserved to Scheduled Castes and Tribes, this would mean that half the positions would be unavailable to higher caste groups, which had long dominated the ranks of government employment and higher education.[15] The backlash against this announcement was swift and violent: across the country, but particularly in the north and the national capital, Delhi, protestors took to the streets in massive demonstrations. Most ominously, a number of upper caste students voiced their opposition through public self-immolations, helping to turn public opinion against the ruling coalition. Amongst those segments of society which stood to gain from the Mandal recommendations, how-

[12]India and Pakistan had fought wars in 1947, 1965, and 1971.

[13]In this case, a 62 year-old Muslim woman had been unilaterally divorced by her husband, then denied alimony under Muslim Personal Law. After the Supreme Court overturned this ruling, and required that the husband pay alimony, the Congress-led government passed the Muslim Women (Protection of Rights on Divorce) Act 1986, which upheld the original ruling denying the wife alimony. This law was widely perceived as a craven act of political pandering, and touted by Hindu nationalists as emblematic of the Congress party's "pseudo-secularism," whereby the national interest had been surrendered to the parochial demands of clamorous minorities, particularly Muslims.

[14]This is a group located above the Scheduled Castes and Scheduled Tribes in the social hierarchy, but still suffering significant social and economic disadvantage.

[15]The Constitution stipulates that reservations must constitute less than half the share; hence the determination that 27.5% of positions would be reserved for OBCs.

ever, of which a significant share supported the ruling Janata Dal party, the policy enjoyed widespread support.

The Mandal recommendation and the *Ram Rath Yatra* were each, in important ways, responses to the larger social and political forces represented by the other. Since the beginning of the year, pressure had been building from Hindu nationalist groups for progress on the temple issue. With October 30 as the announced deadline for work on the temple to commence, the Mandal announcement was conceived by the Janata Dal leader V.P. Singh as, in part, helping to blunt this growing threat, and in the longer run breaking up the Hindu "vote bank" being assiduously cultivated by the BJP. Simultaneously, with the Mandal announcement on August 7, and the protests that followed, the BJP was eager to dissociate itself from the Janata government without explicitly disavowing the Mandal recommendation, which would have alienated the party from the many lower caste voters who supported the ruling. The *Ram Rath Yatra*, conceived months earlier by the BJP leader L.K. Advani, was announced on September 12: with the October 30 deadline looming and the Mandal ruling putting increasing pressure on the BJP to act, the moment was propitious for such a campaign (Jaffrelot, 1996).

2.2.3 *Yatra*

The *yatra* commenced on September 25 from the religious town of Somnath in western India.[16] The imagery employed throughout was designed to promote a pan-Hindu identity transcending the myriad caste and doctrinal divisions endemic to Hindu society. Though long the preserve of high caste Hindus, the ideology of Hindu nationalism had from the beginning held as one of its central doctrines the unification of Hindus across caste boundaries. In a

[16]The choice of this site was significant: a famous Hindu temple had been destroyed there in 1025 by the Muslim invader Mahmoud of Ghazni; in the early years of independence, a new temple had been erected at the site, serving as a model for what Hindu nationalists hoped to achieve in Ayodhya. The date too was significant, as September 25 was the birthday of the Hindu nationalist leader Deendayal Upadhyaya.

similar vein, the leaders of the temple-building campaign had as their conscious objective the promotion of a Hindu identity based on themes and traditions transcending the more divisive aspects of caste-based Hinduism, which were perceived as having allowed Hinduism to be overwhelmed by Muslim invaders (Jaffrelot, 1996). For the Hindu nationalist BJP, the effort to unite Hindus according to religious identity had an additional, more instrumental, purpose: being the party of high-caste Hindus, the ability to win the support of lower caste voters due to religious identity rather than policy concessions was particularly attractive, presenting the possibility of blunting the increasingly sharp edge of caste-based politics without having to compromise the material interests of the party's core constituents.

Political rallies and religious processions were held along the path of the procession, with Hindu activists from across the country converging on the places through which it passed. In the cities, hundreds of thousands would assemble to welcome the arrival of the *yatra*; in the the countryside too, people lined the road offering salutations to the passing *yatra*, or attended the numerous small rallies held along the way. The effects of the *yatra* extended far beyond the populations directly exposed. The national papers and television networks gave almost daily updates on the *yatra*'s progress. Supporting campaigns were held throughout the country, with smaller *yatras*[17] being conducted in places such as Bangalore, Kerala, and West Bengal (Jaffrelot, 1996).

A few quotes from the *Times of India* will suffice to explicate the character and efficacy of the *yatra*. "Like yesterday, Mr. Advani received spontaneous receptions as people lined the entire route to greet the BJP leader with folded hands... despite driving for two days, stopping frequently to receive village crowds" (TOI, 9/27/1990). "More than 3,000 volunteers belonging to the BJP, the VHP and the Bajrang Dal, joined the rally from Fazalpur on two-wheelers, tempos, cars... Thousands of people waited on both sides of the road..." (TOI

[17]These were the *Ram Jyoti Yatras*, "pilgrimages of the light of Ram."

9/28/1990). "On its first leg in Madhya Pradesh, Mr. L.K. Advani's Ram rathyatra has been a roaring success. The adverse weather... has not deterred villagers" (TOI, 10/8/1990). "Hundreds of thousands of saffron-clad supporters of the BJP, the VHP, and Bajrang Dal along with others thronged the streets..." (TOI, 10/21/1990). The following description from the early days of the campaign is illustrative:

> "The organizers had scheduled six public meetings only at major stops every day. But the enthusiastic supporters of the Bajrang Dal and the thousands of people who had lined up on the road for hours would not be satisfied with just a wave of the hand or a benign smile. Whenever the rath slowed down, people surrounded it and would not let go until Mr Advani uttered a few words... Vehicles carrying newsmen often ahead of the rath on the smooth, sprawling national highway. And sure enough, they were accosted by groups of people waiting for the rath, asking when it would pass them... The enthusiasm of the people waiting for the rath was so great..." (TOI, 9/30/1990)

The *yatra* successively passed through the states of Gujarat, Maharashtra, Andhra Pradesh, Madhya Pradesh, Rajasthan, Haryana, and Bihar.[18] State and national leaders had followed the campaign with increasing apprehension, concerned at the potential for large-scale unrest and violence should it reach its destination. After passing through Bihar, the *yatra* was to enter Uttar Pradesh, proceeding to Ayodhya on October 30. The leaders of these two states, however, representing rival parties of the BJP, and governing states particularly susceptible to communal violence, were determined to ensure that the *yatra* not reach its destination. On October 23, Advani was arrested by state authorities in the town of Samastipur, Bihar. His arrest triggered protests throughout the country, often accompanied by violent rioting,

[18]Advani initially bypassed Uttar Pradesh, riding by train from Delhi to Bihar, so that UP would be the final state through which the campaign passed.

and resulting in the arrests of hundreds of thousands of activists.

2.3 Identification Strategy

2.3.1 Empirical Framework

The identifying assumption is twofold: First, I argue that the selection mechanism for the *yatra* was determined by the desire for national exposure, and is not correlated with potential outcomes *at the constituency level*, once controlling for observable constituency characteristics. Second, insofar as the first assumption is violated,[19] by excluding constituencies which determined the route of the *yatra* the selection bias is removed, as the remaining constituencies will have received the treatment due only to their incidentally lying along the road connecting the target destinations.

The identification strategy solves two slightly different problems. By establishing a context in which there occurs quasi-random variation in the exposure to the politico-religious campaign, I am able to solve both the "selection bias" problem, and also to identify a more general average treatment effect, rather than merely a treatment-on-the-treated effect. The latter is important, as I am trying to establish the general efficacy of the *yatra* campaign; if the estimated effects in the analysis are limited to the sub-sample of the population most receptive to the campaign, then the results, while still causally identified, will not be generalizable to the entire population.

Formally, I model the share of the vote accruing to the BJP as linear function of a vector of observables, $\mathbf{X}_i$, and the politico-religious mobilization campaign, *yatra*:

$$bjp91_i = \alpha + \rho yatra_i + \beta \mathbf{X}_i + \varepsilon_i, \tag{2.1}$$

[19]For example, if constituencies most suitable for gaining national exposure were also those in which the party was independently gaining vote share; or if the organizers employed a more sophisticated selection mechanism based on knowledge of unobservable local characteristics.

where $\mathbf{X}_i$ includes the BJP's 1989 vote share, and various socio-demographic characteristics correlated with their change in vote share between 1989 and 1991. Insofar as there is selection on potential outcomes, we will have $E(yatra_i\varepsilon_i) \neq 0$, vitiating the validity of the OLS. A naive OLS estimate would therefore yield:

$$\begin{aligned} E[bjp91_i \mid yatra_i = 1, \mathbf{X}_i] - E[bjp91_i \mid yatra_i = 0, \mathbf{X}_i] &= \underbrace{E[bjp91_{1i} \mid yatra_i = 1, \mathbf{X}_i] - E[bjp91_{0i} \mid yatra_i = 1, \mathbf{X}_i]}_{\text{treatment on the treated}} \\ &\quad + \underbrace{E[bjp91_{0i} \mid yatra_i = 1, \mathbf{X}_i] - E[bjp91_{0i} \mid yatra_i = 0, \mathbf{X}_i]}_{\text{selection bias}}, \end{aligned}$$

with the latter term representing the selection bias, and the first term representing the effect of treatment on the treated (Angrist and Pischke, 2009). The selection bias term accounts for the possibility that the treatment was assigned to constituencies that would have realized a differential change in support for the BJP independent of the treatment. If the *yatra* simply visited constituencies that were already going to increase their support for the BJP, then the estimated coefficient will be biased upwards. By random assignment of the *yatra* treatment, conditional on observables, the selection bias is removed, as

$$E[bjp91_{0i} \mid yatra_i = 1, \mathbf{X}_i] - E[bjp91_{0i} \mid yatra_i = 0, \mathbf{X}_i] \quad \rightarrow \quad E[bjp91_{0i} \mid \mathbf{X}_i] - E[bjp1991_{0i} \mid \mathbf{X}_i] = 0.$$

We are now left with the first term, so that the estimated effect is that of the treatment on the treated. However, random assignment is in fact sufficient to identify the average treatment effect, as

$$\begin{aligned} E[bjp91_i \mid yatra_i = 1, \mathbf{X}_i] - E[bjp91_i \mid yatra_i = 0, \mathbf{X}_i] &= E[bjp91_{1i} \mid yatra_i = 1, \mathbf{X_i}] - E[bjp1991_{0i} \mid yatra_i = 1, \mathbf{X}_i] \\ &= E[bjp91_{1i} \mid \mathbf{X}_i] - E[bjp1991_{0i} \mid \mathbf{X}_i]. \end{aligned}$$

Therefore, if the *yatra* campaign is as good as randomly assigned conditional on observables, as I will subsequently argue, then OLS estimation will be sufficient to identify the average treatment effect.

2.3.2 Summary Statistics and Balance

Table 1 gives summary statistics for the *yatra* and the incidence of rioting. There are 497 constituencies in the 15 states included in our sample. The *yatra* passed through 57 constituencies, with 7 states having no constituencies visited by the *yatra*. In all the regressions, megalopolises such as Bombay and Calcutta are excluded,[20] which brings to 49 the number of constituencies through which the *yatra* passed. Another class of constituencies that we will sometimes want to exclude from our regressions are the "target constituencies,"[21] in which are located cities that plausibly played a role in determining the route of the *yatra*. Excluding these, there remain 38 constituencies through which the *yatra* passed. Riots occurred in 62 constituencies between the 1989 and 1991 elections, and in 35 constituencies during the five weeks of the *yatra*. There occurred 2194 deaths due to rioting in between the two elections, 161 of them during the time of the *yatra*. In the baseline regressions, only the major urban agglomerations are excluded, and not the "target constituencies," except when the two overlap. The reason for this is two-fold: First, as argued above, constituencies were visited not based on potential outcomes, but rather for the purpose of generating national media exposure; insofar as these "target constituencies" did not possess unobservable characteristics correlated with the outcome, this will not introduce bias into our estimates. Second, because these constituencies constituted a large share of those that were visited (and tended to be subjected to the most intense treatment), their exclusion greatly reduces the number of treatment constituencies, rendering it more difficult to test for important heterogeneities in the *yatra*'s effects across population characteristics such as class and religion.

[20]The excluded urban constituencies are Bombay (5 constituencies), Calcutta (3 constituencies), Madras (3 constituencies), Hyderabad (2 constituencies), Pune, and Bangalore (2 constituencies).

[21]The constituencies defined as "target constituencies" are Junagadh, Ahmedabad, Bombay, Nasik, Pune, Hyderabad, Nagpur, Jabalpur, Indore, Bhopal, Udaipur, Jaipur, Dhanbad, and Patna. A few of these, such as Indore and Bhopal, are not clearly target constituencies, but plausibly played a role in determining the route.

In the robustness checks, these constituencies are dropped from the sample, yielding little change in the magnitude or significance of the coefficients.

Table 2 reports the balance of constituency characteristics across the *yatra* treatment. It is not the contention here that the constituencies along the path of the *yatra* were randomly chosen, but merely that they were not chosen based on potential outcomes. In fact, given that the *yatra* passed between many of the largest cities of north India, it is anticipated that areas visited will, for example, be somewhat more urbanized than areas not visited. Column (3) shows the raw difference in means; column (4) adds state fixed effects; and column (5) includes a control for urbanization. Looking only at the raw difference in means, we see that there exist substantial differences across *yatra* and non-*yatra* constituencies. Most conspicuously, the urbanization rate was 9.3 ppts higher in *yatra* constituencies, and the level of the BJP's 1989 electoral support considerably higher, with the party 26 ppts more likely to have competed in *yatra* constituencies and winning 13 ppts more of the vote (with a 16 ppts higher margin) in those constituencies contested. There are also small difference in the composition of the work force. The inclusion of state fixed effects largely removes the differences in prior electoral outcomes: though the party is still 20.8 ppts more likely to have contested a constituency, its vote share in those constituencies contested is no different. The inclusion of an urbanization control does not substantially change these differences. The higher level of prior BJP participation is unsurprising, and poses little trouble for the identification strategy; in all specifications I account for the party's prior participation and and its level of support within the constituency. The balance achieved merely by the inclusion of state fixed effects largely validates the identification strategy, though it will be necessary to account for the differences in urbanization.

2.3.3 *Yatra* Route

Figure 1 shows the route traveled by the *yatra*. Though the route appears conspicuously circuitous, and might suggest selection on outcomes, those familiar with the geography of India will immediately recognize the major urban agglomerations located at each of the *yatra*'s inflection points, so that the path would appear to be designed primarily to reach these cities, while passing through the northern states where the party enjoys its greatest support.[22] To describe the dominant factors determining the route of the *yatra*, I estimate the following regression

$$yatra_i = \alpha + \beta \mathbf{X}_i + \varepsilon_i, \tag{2.2}$$

with $\mathbf{X}_i$ a vector of variables potentially determining the route of the *yatra*.

Table 3 gives the results of this regression. Columns (1) and (2) give the mean and standard deviation of each of the indicated variables. In column (3) are given the results of regressions of the *yatra* on each of the variables independently, without the inclusion of state fixed effects; state fixed effects are included in column (4). The explanatory variables are demeaned by the mean level for non-*yatra* constituencies and divided by the standard deviation.[23] Column (5) gives the results of a regression of the *yatra* on all of the variables simultaneously, without state fixed effects; and, in column (6), with the inclusion of state fixed effects. Looking at column (6), we see that the *yatra* has selected into constituencies having a higher urbanization rate and a higher prior BJP vote share. Accounting for state fixed effects, a constituency with an urbanization rate one standard deviation above the mean is 5.6 ppts more likely to have been visited by the *yatra* than a constituency with an

[22] Even in Madhya Pradesh, where the inflection point is not a megalopolis, the city where the *yatra* turns west is Jabalpur, the third largest city in the state; the two largest cities in the state are Indore and Bhopal, which were also visited by the *yatra*.

[23] That is, $Xdev_i \equiv (X_i - mean(X_{nonyatra}))/sd(X_{nonyatra})$ – which, for notational simplicity, is given as X_i in model (2).

urbanization rate equal to the mean. A 1 sd increase in the BJP vote share is associated with a 3.3 ppts higher probability of a constituency's being visited by the *yatra*. In addition, constituencies with an SC/ST population one standard deviation above the mean are 3.0 ppts more likely to have been visited by the *yatra* than those with an SC/ST population equal to the mean. When we come to the main results, specifications will be estimated including each of these variables as a control. As we will see, despite these constituency characteristics being correlated with a higher likelihood of being visited by the *yatra*, controlling for them has no effect on the estimated results.

Figure 2, which details the evolution of the BJP's vote share across the 1984-1996 elections, hints at one of the principal challenges for the identification strategy: namely, that the *yatra* may have simply passed through constituencies in which the BJP's support was independently trending upwards. As discussed above, these were years in which the BJP substantially increased its national profile. In 1984, the BJP had a marginal national presence (due in part to the assassination of Indira Gandhi just prior to the 1984 election). With the 1989 election, the party had begun to make major inroads in northern India, particularly in the states of Gujarat, Madhya Pradesh, Rajasthan, and Himachal Pradesh. During the 1991 election, the party contested nearly 90% of constituencies, winning 120 of them and gaining 24% of the vote in the seats contested. The party's performance in 1996 continued this trend, with the party winning 161 seats, and 26% of the vote in contested constituencies.

The principal strategy for coping with the potential correlation of the *yatra* with differential trending support is through an interaction of the BJP's 1989 vote share with state fixed effects, which will capture within-state convergence patterns. In addition, alternative specifications are estimated controlling for trends in the BJP vote share between 1984 and 1989. Finally, I also perform placebo regressions using earlier elections. Appendix figure A.1, in any case, shows why this possibility may not represent too serious a threat to the identification strategy. The BJP's vote share across the 1984, 1989, 1991, and 1996 elec-

tions are shown, disaggregated by the *yatra* status of the constituency. Panel (a) shows constituencies for which all elections between 1984 and 1996 were contested; panel (b) shows those constituencies which were contested for the first time in 1989. Despite the slightly sharper increase in support for the BJP between 1984 and 1989 in *yatra* constituencies, the trend levels off between the 1989 and 1991 elections. Amongst constituencies contested for the first time in 1989, there is some evidence for a relative improvement in the BJP's vote share in *yatra* constituencies between 1991 and 1996, but no difference between 1989 and 1991.

2.4 Data

The election data comes from the Election Commission of India. The Election Commission of India maintains on their website text files of the results of all state and national elections since independence.[24] This data set includes information on the number of votes received by every candidate for each constituency, the party to which the candidate belongs, as well as candidate characteristics such as name and gender. In addition, GIS constituency maps can be found on the ECI website for all constituencies as they existed at the time of the 1991 election.

For socio-demographic and public goods data, I use the 1991 Indian census. This data is provided at the village level, which can be aggregated up to the sub-district and district levels. The matching of administrative and political data is problematic in India, as Indian districts imperfectly match up with political constituencies, preventing a simple one-to-one matching of the two. To solve this problem I use the sub-district aggregation of the census data: because sub-districts are largely nested within parliamentary constituencies, they can be more precisely matched. Using the names of the sub-districts, I then match the 1991

[24]I am grateful to Leigh Linden for the use of digitized versions of these files.

census sub-districts to the 2001 census data, for which GIS maps are provided. Finally, using ArcGIS mapping software, I take the centroids[25] of these sub-districts, assigning each to the constituency within which it falls. Figure 3 shows how this is done; the boundaries delineate the parliamentary constituencies, and the points represent the centroids of the sub-districts.

Data on the route of the *yatra* was constructed using daily accounts from *The Times of India*, one of the major national daily newspapers. Using these journalistic accounts, together with GIS maps of the parliamentary constituencies, the road network, and built-up areas,[26] I was able to determine the constituencies through which the *yatra* had passed. Figure 1 shows the route of the *yatra* as determined by this method.[27]

Riot data comes from Varshney and Wilksinson's (2005) data set on Hindu-Muslim riots in India dating back 50 years. This data includes detailed information on the location and timing of riots, including the city and district in which they occurred. To match the riot data to political constituencies, I identify the location of the city in which the riot occurred in the GIS map on built-up areas; then, using ArcGIS, the riots are assigned to the constituencies in which they fall. Figure 4 shows the location of the riots occurring between the 1989 and 1991 elections, and the route of the *yatra*.

Finally, I also construct a variable giving the distance of each sub-district to a national highway. I later explain how this information is used; here, I simply describe how this is variable constructed. Using the map on the Indian road networks, I identify all roads given as "primary." Merging this shape file with that on the sub-districts, I then use ArcGIS software to determine the distance of each sub-district to the nearest "primary" road. Figure 3 shows

[25]These are the points at the geometric center of the given plane figure.

[26]The latter two are from the International Steering Committee for Global Mapping.

[27]The route can also be seen in figure 3: the path traced out in blue is that traveled by the *yatra*; the red lines are the "primary" roads, described below.

how this is done: each sub-district is assigned a distance value calculated as the distance from the sub-district to the nearest length of highway, represented by the red lines on the map.

2.5 Results

2.5.1 *Yatra* and BJP Vote Share

Baseline Results

Figure 5 previews the results. The BJP's 1991 vote share is plotted against its 1989 vote share, disaggregated by the *yatra* status. The BJP's vote share is seen to be higher in constituencies through which the *yatra* passed, conditional on its previous vote share.

The baseline regression is as follows:

$$bjp91_{i,s} = \alpha + \rho yatra_i + \varphi R_i + \phi ayodhya_i + \theta \mathbf{E_i} + \gamma bjp89_i + \delta_s + \boldsymbol{\Upsilon}(\delta_s \times bjp89_i) + \varepsilon_i. \quad (2.3)$$

The outcome variable, $bjp91_{i,s}$, is the BJP's 1991 vote share in constituency i in state s. The explanatory variable of interest, $yatra_i$, a dummy indicating whether the *yatra* passed through a constituency. A control is included for the BJP's 1989 vote share, $bjp89_i$; and a vector of electoral variables, $\mathbf{E_i}$, that influenced the election, including whether the BJP had entered into a vote-sharing arrangement with the Janata Dal party in the previous election,[28] and whether voting in the constituency was held before or after the assassination of Rajiv Gandhi. I also include a dummy for the incidence of a riot between the 1989 and

[28]In the 1989 election, the BJP and Janata Dal had a vote-sharing arrangement, whereby it was agreed that in certain constituencies only of the two parties would compete. This allowed the two parties to maximize the number of seats they jointly won, with the ultimate objective being to reduce the number of seats held by Congress. After the election, the Janata Dal received outside support from the BJP so that the former could hold together a minority-led governing coalition in the central government.

1991 elections, R_i. $ayodhya_i$ is a dummy for the constituencies in which the temple site was either located, or which were adjacent to the constituency.[29] Finally, state fixed effects, δ_s, are included, as well as their interaction with the 1989 vote share, to account for state-specific convergence patterns. The inclusion of the interaction term considerably improves the precision and stability of the results across all specifications.

An important issue is that the *yatra* passed through constituencies in which the BJP had a higher probability of participating in elections in 1989. To account for this, I disaggregate the sample by the BJP's prior participation, and estimate the regressions separately for each sample. Relatedly, the *yatra* may have simply passed through constituencies in which there was an independently upward-trending support for the party. To control for this, I include in some specifications a quadratic in the change in the BJP's vote share between 1984 and 1989, and in others a control for the 1984 BJP vote share and its interaction with the 1989 vote share.

Table 4 gives the baseline results. Limiting the sample to only those constituencies that had previously been contested, of which there were 194, we find that the *yatra* is associated with a 5.3 ppts increase in the BJP vote share, significant at the 1% level. Including controls for the 1984 vote share and its interaction with the 1989 vote share, the coefficient is is 4.6 ppts (5% level); while, with the inclusion of the quadratic trend, it is 4.7 ppts (5% level).[30] Limiting the sample to those constituencies not previously contested, of which there were 237, the coefficients are relatively similar. The effect of the *yatra* is a 7.0 ppts increase in the BJP's vote share, significant at the 1% level. Including the 1984 vote share and its interaction, the coefficient is 5.34 ppts (5% level). The inclusion of a 1984 to 1989 quadratic trend yields a coefficient of 5.39 (5% level). Finally, the regressions are estimated using the entire sample,

[29]These are Akbarpur, Amethi, Bara Banki, Basti, Faizabad, Gonda, and Sultanpur.

[30]The sample size declines with the inclusion of controls for the 1984 election due to the cancellation of elections in Punjab in 1984.

including a dummy for newly contested constituencies. The respective coefficients for the three specifications are 5.70, 4.58, and 4.59, significant at the 1% level. The coefficient on the *ayodhya* dummy is positive but insignificant in all our specifications, ranging in value from 1.7 to 3.9. Riots are seen to have positive effects on the BJP's vote share. When using only the sample of constituencies previously contested by the BJP, the effect is found to be small and insignificant. However, in constituencies not previously contested, the effect is a 6.5 ppts increase in the BJP vote share, significant at the 1% level. When estimated using the complete sample, the effect is 3.7 ppts, significant at the 1% level. In results not shown, I find no evidence that the *yatra* led to an increase in voter turnout.

An important event in the 1991 election was the assassination of Rajiv Gandhi, which occurred a day after the first round of voting and three weeks before the second round.[31] Those constituencies voting after the assassination gave a substantially higher share of the vote to the Congress party, increasing the probability of its victory by more than 20 percentage points (Blakeslee, 2012). An assassination dummy has already been included in the baseline specification; a *yatra*-assassination interaction term is now added, to account for heterogeneities in the *yatra* effect according to whether the election was held before or after the assassination. Table 5 gives the results. In columns (1)-(3), we now see that the *yatra* has in fact increased the BJP vote share by 8.1-9.2 ppts in constituencies previously contested, depending on the 1984 and 1989 vote controls, significant at the 1% level. This is quite a bit larger than the previously estimated effect. Where the assassination intervened, however, the effect of the *yatra* is almost perfectly canceled out. When estimating the full sample, we see that the effect of the assassination is between 6.2-7.6 ppts (1% level), though the assassination now offsets only a portion of the *yatra* effect, due to the lack of an off-setting effect in constituencies not previously contested.

[31]The vote is conducted in India across multiple rounds, with some portion of constituencies voting in each round, and the results not being released until all voting is concluded.

In sum, the baseline specifications show the *yatra* to have significantly increased the BJP's vote share in constituencies through which it passed. Moreover, the effectiveness of the *yatra* has been obscured somewhat by the assassination, which served to effectively neutralize the campaign's effect where the two coincided; taking this into account reveals the *yatra* to have been even more potent. The fact that the assassination interaction perfectly cancels out the *yatra* coefficient (in previously-contested constituencies) gives additional credence to the identification strategy. Had the *yatra* coefficient been reflecting some sort of omitted variable bias, it is hard to see why the interaction term would have had the property of negating the *yatra* effect, unless this omitted constituency characteristic was similarly correlated with the responsiveness of the population to the assassination, a coincidence hard to credit.

Socio-Demographic Controls

To account for the possibility that the *yatra*'s route was correlated with constituency characteristics that may have been correlated with the outcome of interest, I estimate specifications including these possibly confounding variables as controls:

$$bjp91_{i,s} = \alpha + \rho yatra_i + \varphi R_i + \phi ayodhya_i + \theta \mathbf{E_i} + \gamma bjp89_i + \lambda X_i + \delta_s + \boldsymbol{\Upsilon}(\delta_s \times bjp89_i) + \varepsilon_i, \quad (2.4)$$

where X_i is the control variable. Included among these are: percentage of the population that is constituted by different caste and religious groups (brahmins, Muslims, SC/ST); caste and caste/religious fragmentation; the urbanization rate; the percentage of villages possessing paved roads; and the percentage of cultivated land being irrigated.

Table 6 shows the results. Each row gives the coefficient on the *yatra* variable when including the indicated control. Columns (7)-(12) give the *yatra* coefficients in specifications including the *yatra*-assassination interaction term. Columns (1)-(3) and (7)-(9) include only the sample of constituencies previously contested by the BJP; while columns (4)-(6) and

(10)-(12) include the full sample. As can be seen, the *yatra* coefficient is remarkably robust to the controls. The only exception is the urbanization control, where there is a reduction in the coefficient magnitude and statistical significance for the previously-contested sample, when excluding the assassination interaction term: the use of the full sample, however, or specifications including the assassination interaction term, continue to yield large and statistically significant coefficients.[32]

Primary Roads

The most obvious threat to the identification strategy is the possibility that populations clustered near the major roads were independently increasing their support for the BJP during these years, with the *yatra* merely picking up this differential trend due to its traversing the major highways. Though the results are robust to the inclusion of the urbanization rate, which in principle should give a rough proxy for the population's concentration around the main roads, there may nonetheless be characteristics of constituencies along these routes that cannot be captured by the urbanization control, and which will introduce a correlation between the *yatra* and the error term.

To account for this possibility, I construct an index for the concentration of the population within a constituency around a large road. Using the variable for the distance of each sub-district from the nearest "primary" road, I construct the "main road index" using the following formula:

$$MainRoad_i = \sum_{subdist \in i} \frac{pop_{subdist}}{pop_i} \times f(RoadDist_{subdist}), \tag{2.5}$$

[32]The modest decrease in magnitude and significance with the inclusion of an urbanization control is somewhat misleading. For virtually the entirety of the range of urbanization, *yatra* constituencies give a similarly increased share of the vote to the BJP; for a small number of highly urbanized non-*yatra* constituencies, however, the vote share of the BJP is very high, causing the linear fit to attribute a disproportionate share of the BJP vote share to the urbanization rate.

where

$$f(RoadDist_{subdist}) = \begin{cases} ln(x/RoadDist_{subdist}) & \text{if} \quad RoadDist_{subdist} < x \\ 0 & \text{if} \quad RoadDist_{subdist} \geq x. \end{cases}$$

In words, the $MainRoad_i$ index sums a function of the distance of each sub-district in constituency i from the nearest "primary" road, weighting each by the share of the constituency's population contained within the sub-district. The distance function takes the natural log of some distance parameter divided by the distance of the sub-district from the nearest primary road. Therefore, the distance function is monotonically decreasing in distance. Once the distance of the sub-district reaches the chosen parameter, x, the value of the function becomes zero.

Table 8 shows the coefficients on the *yatra* variable using equation (4), with the road index being used as the control variable. Each row shows the results using the indicated parameter x, which ranges from 25 to 500 kms, to construct the index. The *yatra* coefficients are largely unchanged; there is no evidence that it is the population's proximity to the main road driving the results.

Heterogeneous Effects of *Yatra*

An important question is whether the *yatra* proved more effective in constituencies possessing characteristics associated with greater sympathy for Hindu nationalist sentiment. The principal groups associated with support for the BJP at this time were high caste Hindus, as well as the middle and upper classes (Heath, 1999). To explore these issues, I next estimate equation (4) incorporating an interaction term of the *yatra* with the socio-demographic variables included in table 6. The control variables are demeaned by the mean for non-*yatra*

constituencies, and divided by the standard deviation.

Table 8 gives the coefficients on the *yatra* and the *yatra*-control interaction term. The *yatra* was significantly more effective where the share of the Muslims was higher – an increase of 1 sd in the share of the population that is Muslim nearly doubles the effect of the *yatra* – evidence, perhaps, of the greater ability to stoke antipathy towards Muslims in areas where they were of large enough numbers to be deemed a plausible threat. Indeed, the *yatra* is seen to have no effect in constituencies with a Muslim population 1 sd below the mean. Higher levels of irrigation are associated with a weakened effect of the *yatra*, with a 1 sd increase in the share of land being irrigated above the mean associated with the complete negation of the *yatra* effect, which is perhaps due to the association of such constituencies with the middling agrarian classes generally associated with the Janata Dal.[33] There is some evidence that the *yatra* is less effective where a larger share of the population is brahmin, an interesting result given the association of the party with the interests of the upper castes. This may be due to voters in constituencies with higher shares of brahmins being more likely to interpret the *yatra* as a pure upper-caste mobilization campaign, rather than the pan-Hindu campaign the BJP and Hindu activists were arguing it to be. The interaction coefficients are not significant however, and the variation in the brahmin variable is relatively small, so this interpretation should be treated with caution. There is also evidence that the *yatra* was more effective where levels of caste and religious fragmentation were higher, which would be consistent with the campaign's having helped to supplant caste identities in favor of a less fragmented religious identity, though the coefficients again are not statistically significant.

There is no evidence that the *yatra* was more effective in areas populated by those economic classes most supportive of the BJP: the interaction terms for urbanization, the percentage of the work force engaged in manufacturing, and the percentage of villages having

[33]These classes also tended to be those benefitting from the Mandal ruling.

access to paved roads are all small and insignificant. This would seem to provide evidence for the campaign's having worked through channels orthogonal to economic interest, though these variables are coarse proxies for the socio-economic characteristics of interest. There is no evidence that the institutional architecture of the colonial era is associated with a differential responsiveness to the campaign, with the interaction terms on princely states and the landlord-based tenurial system (*zamindar*) showing small and insignificant coefficients.[34]

Persistence of *Yatra* effects

An interesting question is whether the *yatra* had persistent effects on voter sentiments. In table 9, the baseline regressions are estimated using the BJP's 1996 vote share as the outcome variable. When limiting the sample to those constituencies in which the BJP had competed prior to 1991, the effect of *yatra* is found to be a 4 ppts increase in the BJP vote share, which is either significant at the 10% level, or marginally insignificant. However, the *yatra*-assassination interaction term is approximately -11 ppts, more than off-setting the *yatra* effect. When including the full sample of constituencies in the regressions, the *yatra* is found to lead to an increase of 5-6 ppts in the BJP's vote share, significant at the 10% and 5% levels; and the interaction term is now approximately -4 ppts. These results suggest that the *yatra* had enduring, if somewhat diminished, effects on the BJP's vote share. However, it is not possible to distinguish any enduring ideological effects of the *yatra* from a more traditional vote-share persistence.[35]

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[34]The effects of a region having been under indigenous (princely state) rule during the colonial era is studied in Iyer (2004), and the effects of the landlord-based system (*zamindar*) in Banerjee and Iyer (2005). It should be noted that I have not instrumented for these variables as done in the cited papers.

[35]Blakeslee (2013) shows the persistence of vote share and incumbency status when exogenously shifted.

2.5.2 *Yatra* and BJP Victory

Given the influence of the *yatra* on the BJP's vote share, in stands to reason that it would have also increased the likelihood of victory. However, this will depend on whether the constituencies through which it passed would have been closely enough contested absent the campaign to have had their results swayed by the change in vote share caused by the *yatra*. To test for this possibility, I estimate model (3), substituting BJP victory for vote share as the left-hand variable.

Table 10 gives the results. Columns (1)-(3) and (7)-(9) use only the sample of constituencies previously contested; columns (4)-(6) and (10)-(12) the full sample. Columns (7)-(12) also include the *yatra*-assassination interaction term. In columns (1)-(3), the *yatra* coefficient is associated with 7 ppts increase in the probability of BJP victory, but is always insignificant. With the full sample and no controls for the 1984 vote share, the *yatra* is associate with a 13.3 ppts (5% level) increase in the probability of victory, significant at the 5% level; the inclusion of 1984 vote share controls reduces the coefficients to approximately 10 ppts, which is now marginally insignificant. When we include the interaction term, the coefficients become large and statistically significant. Now we see that the *yatra* increases the probability of BJP victory by 22-25 ppts (significant at the 10% and 5% levels), but that this effect is largely wiped out by the assassination.

Given these coefficients, a rough estimate can be given of the number of seats won due to the *yatra*. If we assume the *yatra* to have increased the probability of victory by approximately 10 ppts, as in columns (4)-(6), and with 57 constituencies having been visited by the *yatra*, then this would imply that the campaign swung approximately 6 seats to the BJP. Alternatively, if we assume the *yatra* to have increased the probability of victory 20 ppts when occurring before the assassination, and by approximately 5 ppts when occurring after the assassination, as in columns (10)-(11), and taking into account that the *yatra* passed

through 20 constituencies that both voted before the assassination and were contested by the BJP, and 37 that were contested and voted after, this would again mean that approximately 6 seats were won because of the *yatra* (4 before the assassination, and 2 after). This estimate of 6 seats won due to the campaign are relatively small compared to the party's total of 120 seats won nationwide; however, it must be noted that the national effects of the *yatra* were far greater than the local effects, so that a significant share of the remaining 114 seats were won due to the non-local effects of the campaign.

2.5.3 Riots

The month during which the campaign occurred was associated with a major outbreak of communal violence, much of which occurred along the route of the *yatra*. Whether deliberately staged or incidental to the passions incited, the numerous riots that broke out across the country at this time were closely clustered along the route travelled by the *yatra*.[36] Of the 64 Hindu-Muslim riots which took place between the 1989 and 1991 elections, 35 occurred during the 6 weeks surrounding the *yatra*, 11 of which were in constituencies through which it passed. Of the remaining riots during this period, many were due to the activities of the sympathy *yatras* being held in other parts of the country as discussed above. Figure 4 shows all the cities having riots at any time between the 1989 and 1991 elections.

Communal riots between Hindus and Muslims represent a particularly severe expression of ethnic competition in India, and one which became increasingly common throughout the 1980s and 90s. A large literature has explored the mechanisms determining the locus and timing of Hindu-Muslim riots. Brass (1997), in his seminar work on the topic, emphasizes the importance of "institutionalized riot systems" in generating Hindu-Muslim conflict, with local activists deliberately fomenting communal antagonisms. Varshney (2003) argues that

[36]It should be noted that riots occurring along the route generally occurred in the days prior to or after the actual passage of the *yatra*.

riots are more prevalent in localities in which Hindu-Muslim civic organizations are absent, so that there exist no institutional checks when parties attempt to polarize voters through the incitement to violence. Consistent with this, Jha (2008) finds that localities in which patterns of trade during medieval times (ca. 700-1700 AD) required Hindu-Muslim cooperation were characterized by a lower prevalence of rioting between 1850-1950, and that this pattern continued during the 2002 Godhra riots. Field *et al.* (2008) show that riots are more prevalent in areas of Ahmedabad where Hindus and Muslims are constrained to live in close quarters due to historical property arrangements, so that individuals with low tolerance live in closer proximity to rival groups than they otherwise would. Rioting, in their framework, is a mechanism for gaining control of valuable property. Finally, Wilkinson (2004) argues that the principal explanatory variable of riot occurrence is the local- and state-level alignment of political forces, with political elites allowing, and even fomenting, riots where it is deemed politically expedient, and preventing them where it is not.[37]

I now explore two related issues with respect to Hindu-Muslim riots: the extent to which they were caused by the *yatra*, and their effects on the subsequent electoral outcome. To determine the effect of the *yatra* on the incidence of rioting, I estimate the model

$$R_{i,s} = \alpha + \rho yatra_i + \delta_s + \varepsilon_i, \tag{2.6}$$

where the outcome is a dummy indicating the incidence of a riot between the 1989 and 1991 elections.

Table 11 presents the results. In column (1), we see that the *yatra* is associated with a

[37]Where the heightened salience of ethnic identities serve the interests of local political actors, efforts will be made to polarize voters along communal lines. However, the success of such campaigns depends on the acquiescence of state authorities who control the security apparatus: where state parties depend on Muslim voters for the maintenance of a ruling coalition, or are likely to do so in the future, they effectively suppress communal violence so as not to alienate this crucial constituency; where the electoral incentives are absent, communal violence will be allowed to proceed.

13.9 ppts increase in the incidence of rioting, significant at the 1% level. The inclusion of state fixed effects, in column (2), reduces the coefficients to 10.9 ppts, and the significance to 5%. I next decompose all the riots occurring between the 1989 and 1991 elections into three categories: those occurring before the *yatra*, those occurring after the *yatra*, and those occurring during the *yatra*. The *yatra* is associated with a 9.2 and 6.0 ppts higher incidence of pre-*yatra* rioting, indicating that the *yatra* passed through areas that were already more riot-prone. In column (6), we see no significant correlation between the *yatra* and post-*yatra* rioting, once accounting for state fixed effects. Finally, in columns (7) and (8), we see that the *yatra* is associated with a 12.8 and 11.6 ppts higher incidence of *yatra* riots, significant at the 1% level. In sum, while it appears that the *yatra* has led to an increased incidence of rioting, the fact that the *yatra* is also associated with riots which occurred prior to it suggests that the correlation between the *yatra* and rioting may be due, at least in part, to its selecting into riot-prone areas.

To further explore the relationship between the *yatra* and rioting, I estimate specifications regressing *yatra* riots on the *yatra* dummy, but now controlling for pre-*yatra* riots, as well as riots occurring between the 1984 and 1989 elections ("pre-1989 riot"), the latter enabling us to capture longer-term riot patterns. I also include as controls the BJP's 1989 vote share, as this will likely be correlated with unobserved levels of Hindu nationalist sentiment, an important driver of Hindu-Muslim riots. The results are given in table 12. Columns (3) and (4) include the pre-*yatra* riot variable; columns (5) and (6) the pre-1989 riot variable; and columns (7) and (8) both. The relationship between the *yatra* and rioting is 10.4 (1% level) and 9.6 ppts (5% level) without and with state fixed effects, respectively. The inclusion of the pre-*yatra* riot control reduces the coefficient to 9.0 ppts (5% level), while the inclusion of the pre-1989 riot control leaves it unchanged. The inclusion of both simultaneously again reduces the coefficient to 9.0 ppts (5% level). In all specifications, the pre-*yatra* riot and pre-1989 riot controls are strongly predictive of *yatra* riots, but nonetheless show the *yatra*

exercising an independent effect. Finally, in columns (9) and (10), I estimate the correlation between the *yatra* and pre-*yatra* riots: controlling for state fixed effects, the correlation between the two is now an insignificant 4.5 ppts. This evidence points to the *yatra*'s having increased the probability of rioting by 9.0 ppts.

To explore the effect of the riots on the BJP vote share, I estimate the following specification:

$$\begin{aligned} bjp91_{i,s} &= \alpha + \rho yatra_i + \gamma bjp89_i + \theta \mathbf{E}_i + \phi templetown_i + \delta_s + \boldsymbol{\Upsilon}(\delta_s \times bjp89_i) \\ &\quad + \beta_1(yatra_i \times yatraRiot_i) + \beta_2 yatraRiot_i + \beta_3 preyatraRiot_i \\ &\quad + \beta_4 postyatraRiot_i + \varepsilon_i. \end{aligned} \tag{2.7}$$

The right-hand riot variables are specified as four different types of riot events: the incidence of riots; the numbers of riots; the incidence of riot-caused deaths; and the number (in logs) of riot-caused deaths.[38] Each riot variable is disaggregated according to its timing (before, during, and after the *yatra*); and an interaction term of the *yatra* and riot event is included to capture the effects of riot events plausibly attributed to the local campaign itself – though it must be emphasized that riots occurring during this time in other places were also likely due to the heightened polarization across the country caused the *yatra*, which was covered extensively in the national press. This interaction term can be interpreted as either the amplification of riot events due to their association with the *yatra*, or as the true effect of the event when freed of endogeneities that might normally afflict such variables.

Table 13 shows the results of these regressions. Panel A estimates the effect of riots; Panel B the effect of riot deaths. Columns (1)-(6) use dummies of riots and riot deaths as the explanatory variables; columns (7)-(12) use the number of riots and riot deaths. As before, I estimate both the previously-contested sample and the full sample of constituencies.

[38] I specify the number of deaths as $log(1 + deaths)$ to account for the large number of constituencies for which the number of deaths is 0.

In column (3), we see that *yatra*-"caused" riots are associated with a 5.28 ppts increase in the BJP vote share, which is statistically insignificant. The lack of statistical significance is unsurprising, given the insignificant coefficient on the aggregated riot variable in column (1). When the sample is expanded to include all constituencies, we now see that riots occurring during and after the *yatra* are associated, respectively, with a 3.5 ppts (10% level) and 3.0 ppts (marginally insignificant) increase in the BJP's vote share. Riots along the path of the *yatra* are no more potent than other riots occurring at this time. Where the variable used is the number of riots, we find similar results; the only difference is that the number of post-*yatra* riots has no effect on the BJP's vote share when using the full sample. The effects of riot-caused deaths are somewhat similar. For the full sample, we see that the occurrence of a riot death at the time of the *yatra* leads to statistically significant 4.7 ppts increases in the BJP vote share, and that a 1% increase in the number of deaths leads to a 2.4 ppts increase in the BJP vote share. For the sample of previously-contested constituencies, there is some evidence for deaths "caused" by the *yatra* increasing the BJP vote share, though the coefficients are statistically insignificant. There is also evidence for deaths occurring before the *yatra* leading to a higher BJP vote share: in columns (2) and (8), respectively, we see the incidence of a riot-related death leading to a 6.5 ppts increase in the BJP vote share, and a 1% increase in the number of deaths leading to a 4.18 ppts increase in the BJP vote share.

This evidence would appear to point to riots and riot deaths occurring during the *yatra* having a large effect on the BJP's vote share in places that the BJP was contesting for the first time in 1991.[39] This may be taken as evidence for the larger effects of Hindu-Muslim violence in areas not previously characterized by a high prevalence of ethno-religious politics;

[39]Because the effects are somewhat small and insignificant in places that the BJP was already contesting, it follows that the effects were much larger in places being contested for the first time. In results not shown, I find this to indeed have been the case.

in areas where the BJP had a more established presence, it may be that riots associated with the *yatra* were more readily discounted as partisan events. In those constituencies previously contested by the BJP, deaths associated with riots are relatively potent when occurring before the *yatra*; riot-deaths occurring during the *yatra*, in contrast, had no effect on the BJP's vote share. This may again be due to the voters in such areas having a more jaundiced eye for riot activities attributable to the partisan electioneering of the *yatra*.

2.5.4 Robustness Checks

Despite earlier arguments for the identification strategy, as well as the incorporation of the road index to account for the concentration of the population around national highways, there nonetheless remains the possibility that the *yatra* was correlated with unobservables unaccounted for by these controls. I therefore perform additional robustness tests to further validate the results. The two principal strategies are: first, to progressively reduce the sample included in the regressions; and, second, to perform a placebo test by estimating the regressions using 1989 election outcomes as the left-hand variable.

Table 14 shows the results from regressions with progressively smaller samples. In each panel, I first estimate the regression using the full sample of the included states, then remove the large cities, and finally drop out both the large cities and the "target constituencies" which determined the route of the *yatra*.[40] In Panel A I use the entire sample of states – the second row of this panel, therefore, uses the sample included in our baseline regressions. In Panel B I drop the states of Tamil Nadu and Kerala, where the BJP had only a slight presence;[41] in Panel C, the sample includes only those states through which the *yatra* passed.[42]

[40]These are the inflection points in figure 1, as well as the other larger cities plausibly influencing the route of the *yatra*. The full list is given in footnote 21.

[41]In results not shown, I also drop Andhra Pradesh, Haryana, Orissa, and West Bengal, states where the BJP had a middling presence. The results found using this sample are essentially the same.

[42]I also drop the states of Haryana and Karanataka: though the *yatra* visited each, it spent less than one

Columns (1)-(6) show the results from specifications excluding the *yatra*-assassination interaction term, and columns (7)-(12) the results where it is included; as before, the effects are estimated for both the full samples and only those constituencies where the party had competed in the prior election. As can be seen, the effect of the *yatra* is found to be remarkably robust. Indeed, even when including only constituencies located in the states visited by the *yatra*, and removing all large cities and any constituencies plausibly determining the *yatra*'s route, as shown in the final row of columns (4)-(6) and (10)-(11), the *yatra* effect remains large and statistically significant.

I next perform the placebo regression, re-estimating model (3) using the 1989 BJP vote share as the outcome variable. As before, controls are included for riots, SC/ST constituencies, state fixed effects, and an interaction of state fixed effects with the prior vote share. Dummies for the incidence of riots are also included; the riot dummies for the 1989 elections indicate the incidence of a riot between the 1984 and 1989 elections. Table 15 shows the results of this regression; the original regressions are included for comparison. Columns (1)-(2) give the original results, using the two samples of previously-constested constituencies and all constituencies, respectively; columns (3)-(4) give the results including the assassination dummy and its interaction with the *yatra*. Columns (5)-(8) give the results for the corresponding specifications using the 1989 election as the outcome. Having occurred in 1991, the assassination should not have affected elections in 1989; for completeness, however, these terms are included. The coefficients on the *yatra* variables for the 1989 elections are reassuringly small and insignificant. The inclusion of the *yatra*-assassination interaction term increases the magnitude of the *yatra* coefficient somewhat, though it is still insignificant.

The results of these robustness checks, therefore, provide further validation of the identification strategy. Taken in tandem with the results of tables 6 and 7, where controls were

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day in the first of these states, and passed through only one constituency in the latter.

included for various constituency characteristics, including the population's concentration around large highways, these results should allay any concerns of the results' being driven by omitted variables.

2.5.5 *Yatra* and Public Goods

I finally turn to an analysis of the *yatra*'s effects on local policy outcomes. As discussed earlier, one of the reasons for which the ethnicization of politics is of interest is the close association of ethno-linguistic fractionalization and poor policy and economic outcomes. A variety of explanations have been proposed for these adverse political and economic results, ranging from the inability of different ethnic groups to solve collective action problems (Miguel and Gugerty, 2005; Habyarimana *et al.*, 2007),[43] to a divergence of policy preferences across across ethnic groups (Alesina *et al.*, 1999).

To explore the effects of the *yatra* on local policy outcomes, I estimate the relationship between a sub-district having been visited by the *yatra* and changes in public goods over the subsequent 10 years. The specification is as follows:

$$\begin{aligned} PG2001_{t,i,s} &= \alpha + \beta_1 yatrasubdist_t + \beta_2 yatra_i + \beta_3 onmainroad_t \\ &\quad + \gamma PG1991_t + \gamma bjp89_i + \varphi R_i + \lambda X_i + \delta_s + \Upsilon(\delta_s \times bjp89_i) + \varepsilon_{t,i}. \end{aligned} \tag{2.8}$$

$yatrasubdist_t$ is a dummy equaling 1 if the *yatra* passed within 10 kms of sub-district t, as determined by the distance from the *yatra* road to the centroid of the sub-district. *yatra*, as before, is a dummy indicating that the constituency i in which the sub-district lies was visited by the $yatra_i$; and $onmainroad_t$ a dummy indicating that the sub-district lies within

[43]Miguel and Gugerty (2005) argue that the difficulty of preventing free-riding across the ethnic groups lowers investment in public goods in areas characterized by higher levels of ethnic heterogeneity, and show how this operates in the context of voluntary community school funding in rural Kenya. Habyarimana *et al.* (2007) show that co-ethnics are more likely to adopt cooperative strategies in a series of games designed administered in Uganda, and also seem to exist within tighter social networks, facilitating communication and collaboration.

10 kms of any large highway.[44] $PGyear_{t,i,s}$ gives the level of the public good in the years 1991 and 2001 for sub-district t, measured as the percentage of villages within the sub-district possessing the public good. Because a dummy is included for the constituency's being visited by the *yatra*, the *yatrasubdist* variable will be capturing the differential effect for constituencies located closer to the road. I also include the *onmainroad* dummy to ensure that we're not simply picking up a more general main-road effect. Error terms are clustered at the constituency level.

Table 16 shows the results of this regression. Columns (1) and (6) include only the *yatrasubdist* dummies. The subsequent columns include, respectively, the *yatra* dummy, the *onmainroad* dummy, and the two together in a single regression. Finally, in columns (5) and (10) are included constituency fixed effects and the *onmainroad* dummy. Across specifications, there are statistically significant increases in handpump and tap drinking water of approximately 4 and 6 ppts, respectively. There are also increases in domestic (approximately 5 ppts), agricultural (4 ppts) and industrial electrification (5 ppts); and increases in telephone access (6 ppts), paved roads (2 ppts), and primary education (1.5 ppts). Finally, we see an increase in health subcenters and irrigation. Even with the inclusion of constituency fixed-effects, in columns (5) and (10), most of the results continue to obtain, with the exception of handpump drinking water and industrial electrification. There are also now statistically significant increases in the availability of middle and high schools.

The results are striking. The *yatra* is associated with increases in many of the given public goods. Though one might be concerned that an omitted variable is in fact driving these results, they are robust even to the inclusion of controls for proximity to large roads and constituency fixed effects. Appendix table A.1 shows again the results of the regressions including the *yatra* dummy, with and without the *mainroad* dummy, with the coefficients

[44]Refer to figure 3, which depicts the primary roads, the *yatra* route, the constituency boundaries, and the sub-district centroids.

on *yatra* and *yatrasubdist* given side-by-side. As can be seen, the *yatra* coefficients are generally small and insignificant, in stark contrast to those for the *yatrasubdist* dummy. This is consistent with the *yatra* having exercised a localized influence independent of its effect on the electoral outcomes in the 1991 campaign. Given the fact that the campaign is estimated to have changed the identity of the MP in only approximately 6 constituencies, it is unlikely that the results on public goods would have been driven by the identity of the MP.

The public goods results presented here are somewhat speculative. The electoral correlations identified in this paper are found for elections occurring a mere 7 months after the occurrence of the *yatra*; the changes in public goods, in contrast, took place over the course of a full decade following the *yatra*. Nonetheless, the results seem plausible, and I cite two possible mechanisms. First, by increasing the level of inter-caste Hindu solidarity, it is possible that the *yatra* helped to solve the collective action problem, somewhat akin to the mechanism postulated in Miguel and Gugerty (2005). A second possibility is that the *yatra* empowered the BJP at the local level, and that local BJP politicians were more adept at implementing policy, due to a lower susceptibility to the corruptions generally associated with the Congress party. However, given the possibility that there is some omitted variable which cannot be captured using the *onmainroad* control and the constituency fixed effects, I present these results as more suggestive than conclusive.

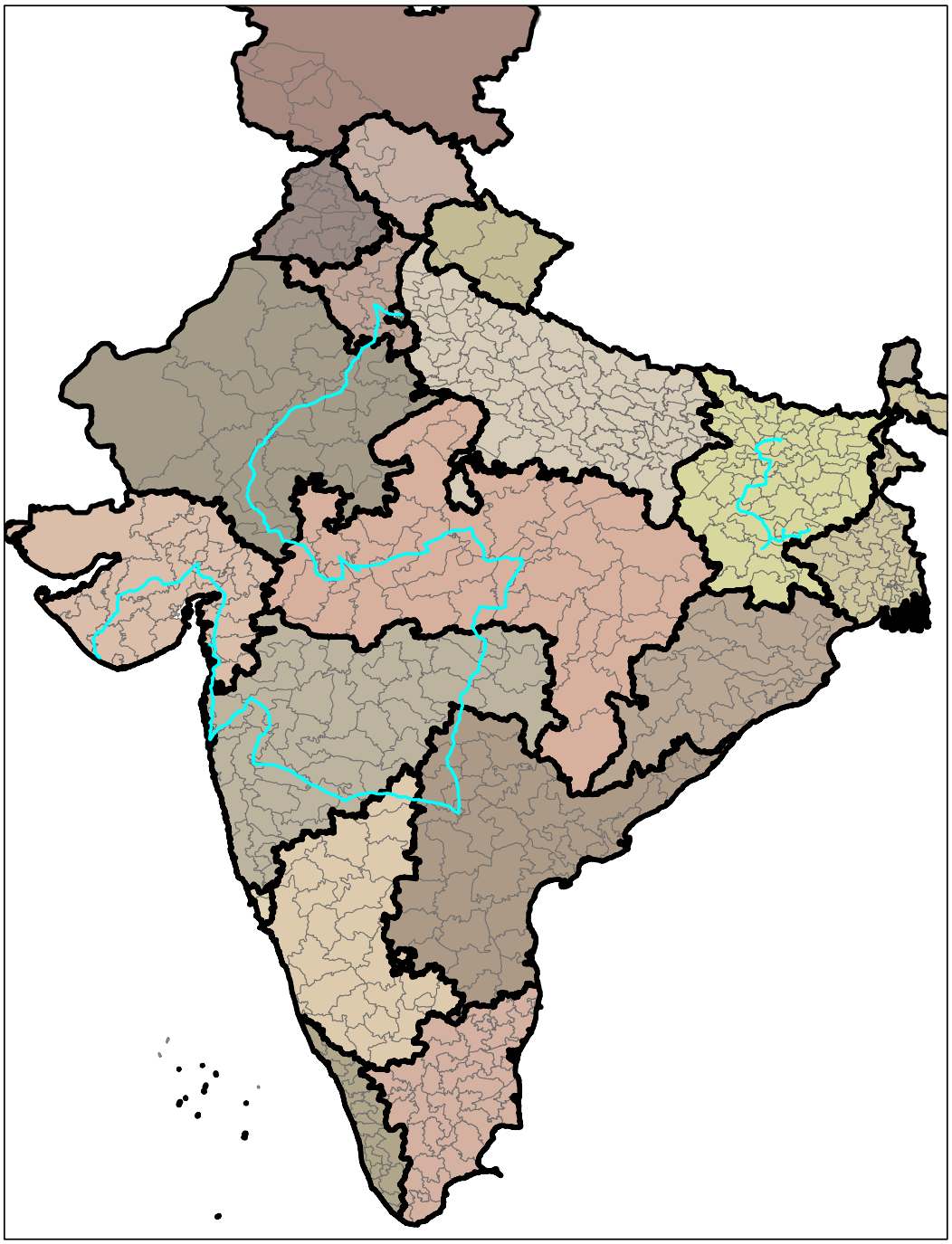
2.6 Conclusion

This paper shows strong evidence for the efficacy of the *yatra* campaign in mobilizing voters according to ethno-religious identity. The campaign being waged at a moment of heightened religious sentiment, voters had been primed to be receptive to its message of aggressive Hindu nationalism. The effect was amplified in constituencies featuring a large share of Muslim

inhabitants, indicating a greater success where the central message of the campaign had local validation in the presence of the stigmatized minority. The incidence of Hindu-Muslim riots also played a substantial role in increasing the BJP's vote share, with the effect being amplified when coinciding with the *yatra*, particularly in constituencies unaccustomed to ethno-religious politics. The efficacy of this campaign provides striking evidence for both the general effectiveness of political propaganda, as well as models stressing the instrumental character of ethnic politics, with political entrepreneurs strategically heightening ethno-religious sentiments for electoral gain.

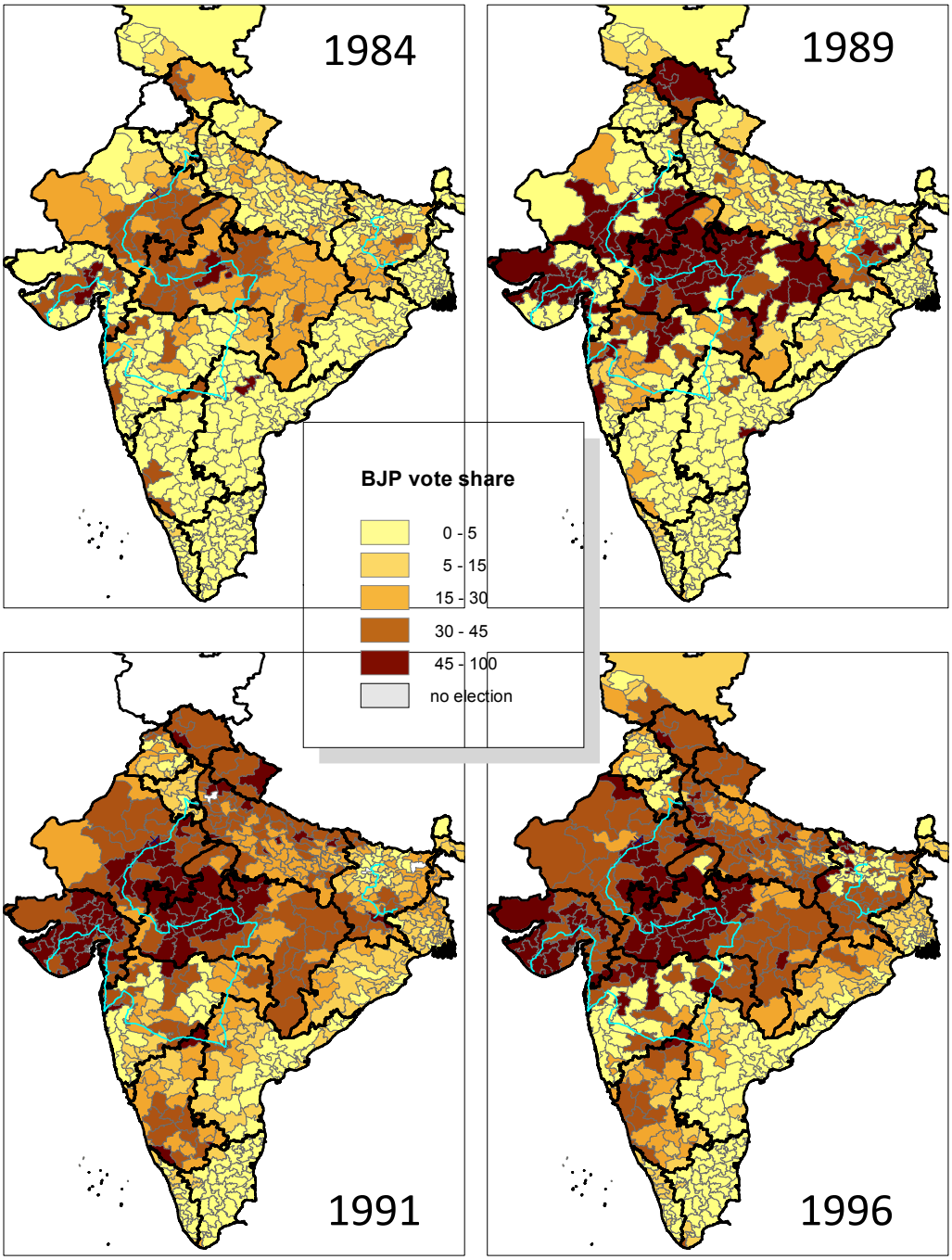
In addition, there is evidence for the *yatra*'s improving the provision of local public goods. This finding provides an interesting counterpoint to the electoral results; whereas it is generally posited that ethno-linguistic mobilization has negative implications for policy and economic outcomes, this result shows, in contrast, potential benefits to the mobilization of ascriptive identities. There is no necessary contradiction here, however, with models stressing the negative consequences of ethno-linguistic fractionalization for public goods allocations: the campaign may have helped to mitigate the social cleavages of the caste system by their replacement with a less divisive pan-Hindu identity.

Figure 2.1: *Yatra* Route



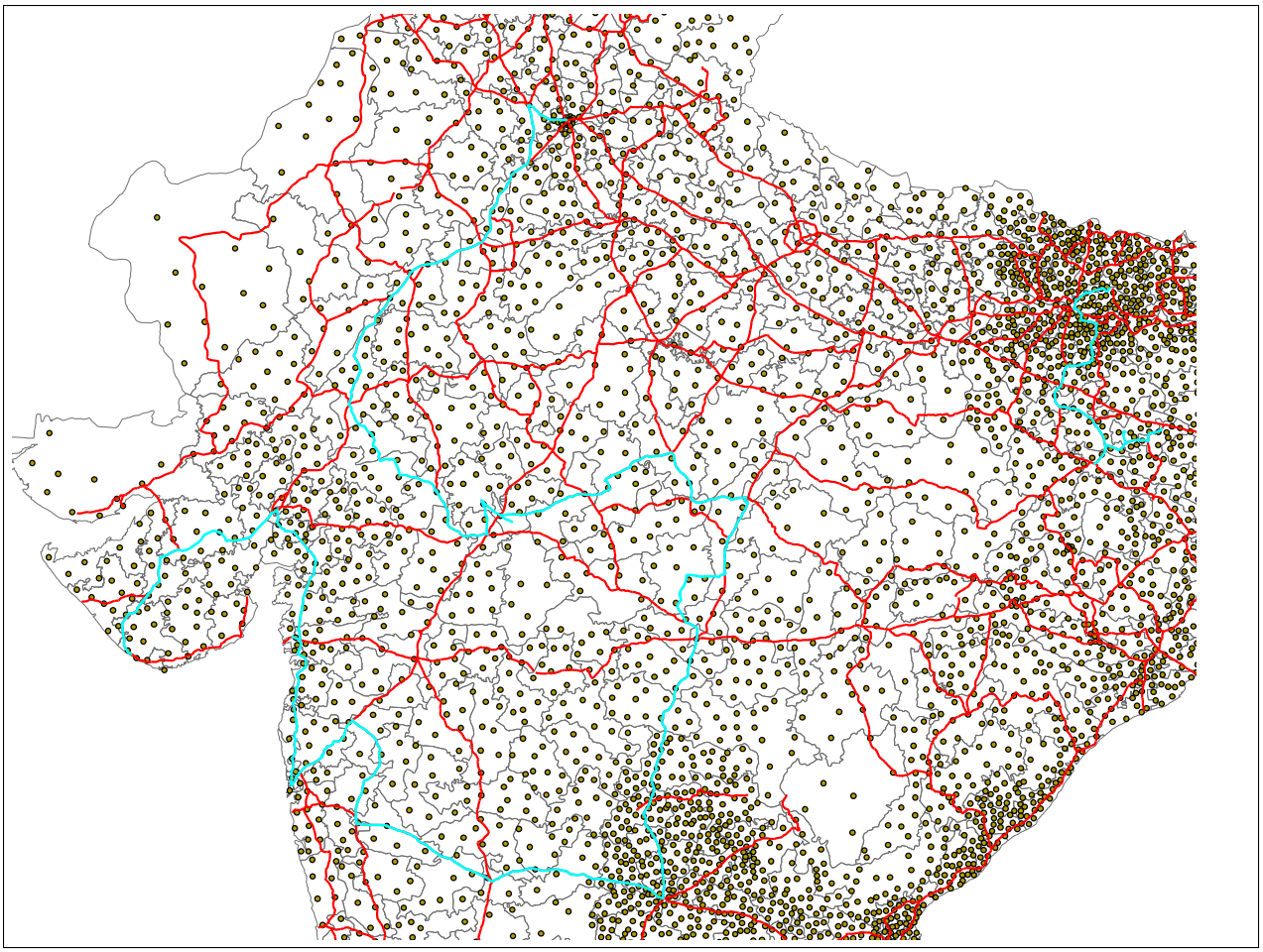
Notes: This map shows the route traveled by the *yatra*. States are indicated by bold boundary lines; the smaller units are parliamentary constituencies.

Figure 2.2: *Yatra* and BJP Vote Share Trend



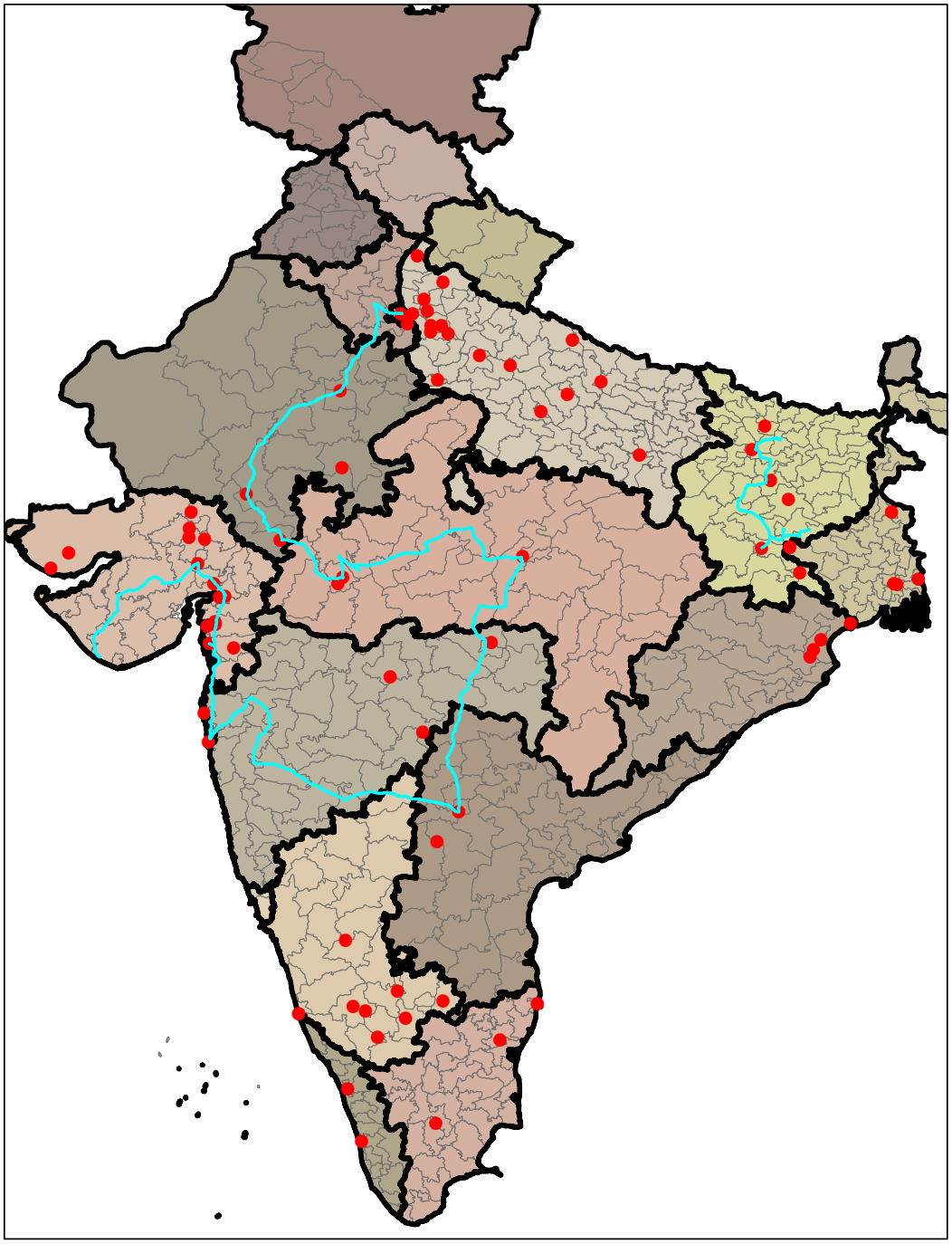
Notes: These maps shows the route traveled by the *yatra*. The BJP's vote share in the respective years is indicated by the color coding.

Figure 2.3: Sub-Districts, Cities, Primary Road Network, and the *Yatra* Route



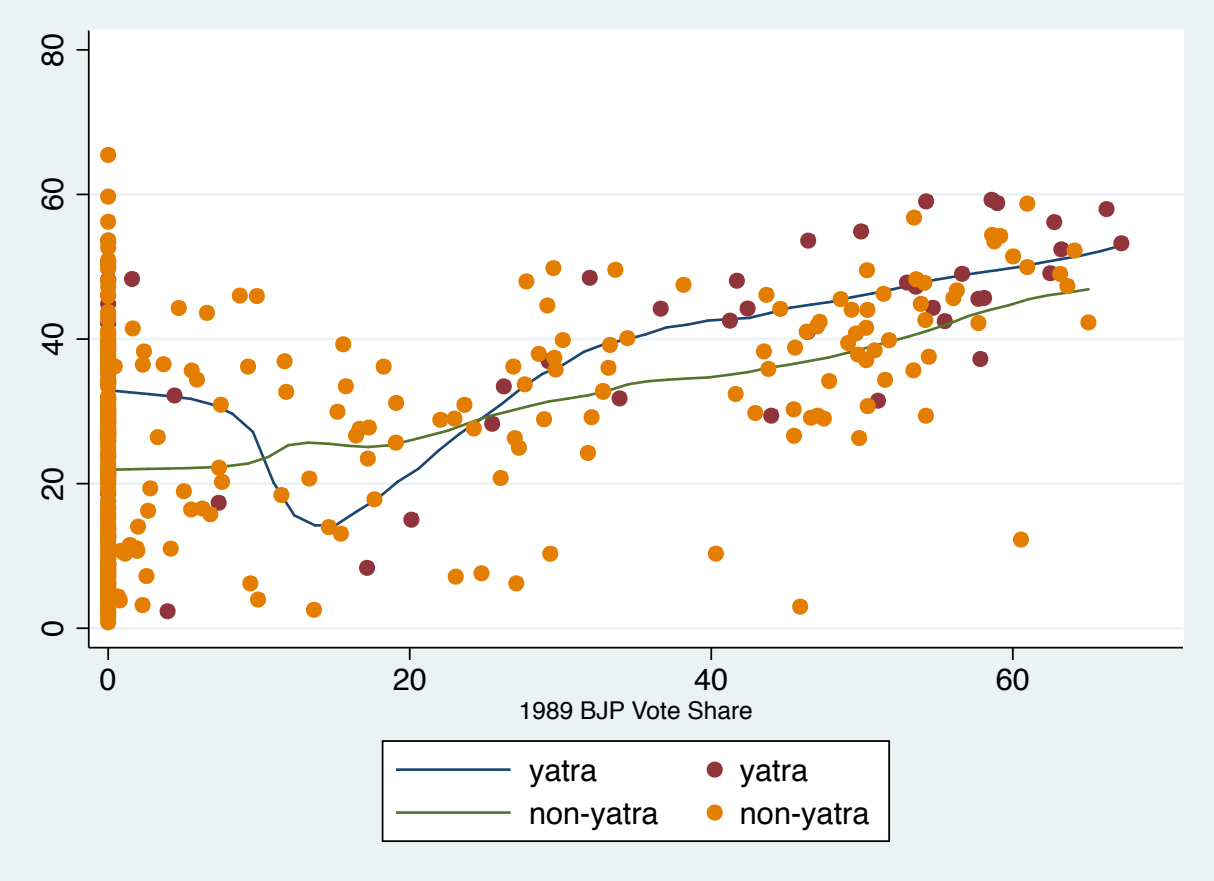
Notes: This map shows the route traveled by the *yatra*, indicated by the blue line. The red lines are primary roads. The points are the centroids of sub-districts, and the the boundaries indicate political constituencies.

Figure 2.4: Riots



Notes: This map shows the route traveled by the *yatra*. States are indicated by bold boundary lines; the smaller units are parliamentary constituencies. The red dots indicate locations where riots occurred.

Figure 2.5: *Yatra* and BJP Support



Notes: This figure plots the BJP's 1991 vote share against its 1989 vote share, disaggregated by whether the constituency was visited by the *yatra*.

Table 2.1: Summary Statistics

states	constituencies	*yatra*			riots		deaths	
		total	exclude		any	*yatra*	any	*yatra*
			cities	+ targets				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Andhra Pradesh	42	5	3	3	2	1	312	7
Bihar	54	8	8	6	6	3	119	7
Gujarat	26	11	11	9	10	7	420	20
Haryana	10	3	3	3	1	0	0	0
Himachal Pradesh	4	0	0	0	0	0	0	0
Karnataka	28	1	1	1	7	6	302	38
Kerala	20	0	0	0	2	2	7	4
Madhya Pradesh	40	7	7	4	2	1	53	11
Maharashtra	48	17	11	9	5	3	8	0
Orissa	21	0	0	0	1	0	16	0
Punjab	13	0	0	0	0	0	0	0
Rajasthan	25	5	5	3	4	2	43	1
Tamil Nadu	39	0	0	0	3	1	12	0
Uttar Pradesh	85	0	0	0	14	7	790	61
West Bengal	42	0	0	0	5	2	112	12
Total	497	57	49	38	62	35	2194	161

Notes: This table contains the tabulation of the sample used for the study. Column (1) gives the number of constituencies in each state included in our sample. Column (2) gives the number of constituencies visited by the *yatra*; column (3) the number when excluding the large cities; and column (4) when excluding both the large cities and and "target constituencies." Column (5) gives the number of constituencies experiencing any riot; and column (6) the number of constituencies experiencing a riot at the time of the *yatra*. Column (7) gives the number riot-related deaths; and column (8) the number of riot-deaths occurring during the *yatra*.

Table 2.2: Balance

	non-*yatra*	*yatra*	Difference		
	(1)	(2)	(3)	(4)	(5)
cities					
urbanization rate	0.196	0.289	0.093***	0.086***	
			(0.025)	(0.026)	
work force					
cultivators	0.089	0.071	-0.018*	-0.016*	-0.001
			(0.010)	(0.009)	(0.008)
agricultural labor	0.115	0.089	-0.025**	-0.025**	-0.009
			(0.013)	(0.012)	(0.011)
forestry	0.021	0.017	-0.005	-0.003	-0.002
			(0.004)	(0.003)	(0.003)
mine workers	0.011	0.032	0.021***	0.022***	0.022***
			(0.007)	(0.008)	(0.008)
manuf (hh)	0.041	0.031	-0.010	0.002	0.003
			(0.008)	(0.009)	(0.009)
manuf (non-hh)	0.151	0.189	0.038**	0.022	-0.003
			(0.015)	(0.014)	(0.013)
construction	0.041	0.047	0.007*	0.001	-0.002
			(0.004)	(0.003)	(0.003)
trade	0.218	0.199	-0.019**	-0.015*	-0.012
			(0.008)	(0.008)	(0.008)
transportation	0.071	0.074	0.003	-0.001	-0.006
			(0.005)	(0.005)	(0.005)
other	0.242	0.251	0.009	0.013	0.010
			(0.012)	(0.012)	(0.012)
marginal workers	0.031	0.030	-0.001	-0.002	0.001
			(0.004)	(0.003)	(0.003)
elections					
competed 1989	0.395	0.658	0.263***	0.208***	0.188**
			(0.083)	(0.078)	(0.078)
vote share 1989	26.108	39.565	13.457***	-3.480	-4.047
			(4.453)	(3.231)	(3.354)
vote margin 1989	-17.052	-1.086	15.966***	-3.875	-4.654
			(5.880)	(4.677)	(4.851)
close election	0.187	0.160	-0.027	-0.045	-0.032
			(0.083)	(0.090)	(0.094)
ethnicity					
brahmins	0.051	0.044	-0.007	-0.005	-0.004
			(0.006)	(0.004)	(0.004)
muslims	0.096	0.057	-0.039**	-0.007	-0.007
			(0.016)	(0.011)	(0.011)
sikhs	0.027	0.001	-0.025	-0.014**	-0.015**
			(0.020)	(0.006)	(0.006)
SC/ST	0.252	0.234	-0.018	-0.017	-0.002
			(0.023)	(0.021)	(0.021)
caste fragm	0.861	0.897	0.036	0.010	0.010
			(0.025)	(0.023)	(0.023)
geography/institutions					
steep/sloping	0.001	0.002	0.000	0.000	0.000
			(0.001)	(0.000)	(0.000)
barren/rocky	0.007	0.009	0.003*	0.001	0.001
			(0.001)	(0.001)	(0.001)
princely states	0.261	0.403	0.142**	-0.008	-0.007
			(0.057)	(0.044)	(0.045)
zamindar	458	0.357	-0.101	0.027	0.034
			(0.066)	(0.047)	(0.048)
state FEs			no	yes	yes
urbanization			no	no	yes

Notes: This table shows the balance across *yatra* and non-*yatra* constituencies. The coefficients in column (3) come from a regression of the indicated variable on the *yatra* dummy; those in column (4) include state fixed effects; and those in column (5) include the urbanization rate.

Table 2.3: *Yatra* Route

Outcome: *Yatra*	mean	sd	single variate		multivariate	
	(1)	(2)	(3)	(4)	(5)	(6)
BJP1989	12.355	19.855	0.104***	0.046***	0.071***	0.033**
			(0.013)	(0.016)	(0.014)	(0.016)
brahmins	0.049	0.034	-0.022	-0.021	-0.009	0.012
			(0.017)	(0.024)	(0.018)	(0.026)
muslims	0.091	0.093	-0.077***	-0.046**	-0.042**	-0.030
			(0.017)	(0.023)	(0.017)	(0.024)
SC/ST	0.248	0.133	0.018	0.009	0.012	0.030*
			(0.015)	(0.016)	(0.017)	(0.018)
caste fragm	0.849	0.179	-0.024*	-0.044***	0.021	-0.007
			(0.014)	(0.014)	(0.016)	(0.019)
manufacturing	0.197	0.097	0.044***	0.048***	0.012	0.019
			(0.016)	(0.015)	(0.017)	(0.017)
urbanization	0.219	0.177	0.075***	0.067***	0.060***	0.056***
			(0.014)	(0.013)	(0.017)	(0.016)
paved roads	0.473	0.255	-0.017	0.047	-0.016	0.018
			(0.016)	(0.029)	(0.019)	(0.034)
irrigation	0.374	0.275	-0.058***	-0.013	-0.020	-0.015
			(0.016)	(0.024)	(0.018)	(0.024)
state FEs			no	yes	no	yes

Notes: Column (1) gives the mean level of the indicated variables; column (2) gives the standard deviation. The coefficients in column (3) come from a regression of the *yatra* on each of the indicated variables independently, with each variable being demeaned by the mean level for constituencies not visited by the *yatra* and divided by the standard deviation; column (4) includes state fixed effects. Column (5) gives the coefficient from a regression of the *yatra* dummy on all the variables simultaneously; column (6) includes state fixed effects.

Table 2.4: *Yatra* and BJP Vote Share

Outcome: BJP Vote Share 1991	prior compete			newly contested			full sample		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
yatra	5.296***	4.641**	4.680**	7.044***	5.343**	5.385**	5.696***	4.581***	4.585***
	(1.876)	(1.822)	(1.826)	(2.503)	(2.473)	(2.438)	(1.457)	(1.427)	(1.428)
ayodhya	1.699	3.610	3.072	1.890	2.852	3.945	2.144	3.350	3.172
	(8.201)	(7.963)	(7.956)	(3.586)	(3.489)	(3.462)	(3.221)	(3.130)	(3.126)
riot	1.365	0.948	0.969	6.442***	6.760***	6.341***	3.603***	3.684***	3.719***
	(1.768)	(1.718)	(1.726)	(1.837)	(1.783)	(1.764)	(1.245)	(1.206)	(1.210)
post-assassin	-2.333	-3.022*	-2.722	-1.433	-1.687	-1.616	-2.025*	-2.543**	-2.465**
	(1.706)	(1.681)	(1.657)	(1.461)	(1.418)	(1.398)	(1.086)	(1.057)	(1.055)
SC/ST	0.681	0.635	0.694	0.871	0.936	1.331	0.739	0.679	0.692
	(1.586)	(1.532)	(1.537)	(1.259)	(1.232)	(1.222)	(0.971)	(0.945)	(0.945)
BJP1984		0.403**			0.301***			0.312***	
		(0.163)			(0.081)			(0.071)	
BJP1984 X BJP1989		-0.004			0.000			-0.002	
		(0.003)			(0.000)			(0.002)	
BJP1989 - BJP1984			-0.308**			-0.898***			-0.267***
			(0.119)			(0.235)			(0.052)
BJP1989 - BJP1984 SQ			0.002			-0.020***			0.001
			(0.002)			(0.007)			(0.001)
R-squared	0.809	0.824	0.823	0.730	0.751	0.759	0.780	0.796	0.796
N	197	194	194	237	231	231	434	425	425

Notes: Each column gives the results of a regression of the BJP's 1991 vote share on the indicated variables. Columns (1)-(3) include only the sample of constituencies contested by the BJP in 1989; columns (4)-(6) only those constituencies in which the party had not competed in 1989; and columns (7)-(9) all constituencies. Controls are also included for the BJP's 1989 vote share, state fixed effects, and the interaction of the two. Standard errors are iid.

Table 2.5: *Yatra*, Assassination, and BJP Vote Share

Outcome: BJP Vote Share 1991	prior compete			full sample		
	(1)	(2)	(3)	(4)	(5)	(6)
yatra	9.186***	8.099***	8.340***	7.574***	6.161***	6.229***
	(2.648)	(2.581)	(2.579)	(2.265)	(2.209)	(2.210)
yatra X post-assassin	-7.226**	-6.385*	-6.808**	-3.125	-2.618	-2.729
	(3.508)	(3.402)	(3.419)	(2.884)	(2.793)	(2.798)
ayodhya	2.155	3.954	3.550	2.076	3.288	3.110
	(8.123)	(7.902)	(7.887)	(3.221)	(3.131)	(3.127)
riot	1.081	0.713	0.749	3.535***	3.627***	3.664***
	(1.756)	(1.709)	(1.714)	(1.247)	(1.208)	(1.211)
post-assassin	-1.255	-2.049	-1.716	-1.774	-2.331**	-2.244**
	(1.768)	(1.746)	(1.718)	(1.111)	(1.081)	(1.079)
SC/ST	0.803	0.744	0.825	0.781	0.716	0.730
	(1.572)	(1.521)	(1.525)	(0.971)	(0.946)	(0.946)
BJP1984		0.390**			0.311***	
		(0.162)			(0.071)	
BJP1984 X BJP1989		-0.004			-0.002	
		(0.003)			(0.002)	
BJP1989 - BJP1984			-0.318***			-0.266***
			(0.118)			(0.052)
BJP1989 - BJP1984 SQ			0.002			0.001
			(0.002)			(0.001)
R-squared	0.814	0.828	0.828	0.780	0.797	0.797
N	197	194	194	434	425	425

Notes: Each column gives the results of a regression of the BJP's 1991 vote share on the indicated variables. Columns (1)-(3) include only the sample of constituencies contested by the BJP in 1989; and columns (4)-(6) all constituencies. Controls are also included for the BJP's 1989 vote share, state fixed effects, and the interaction of the two. Error terms are iid.

Table 2.6: *Yatra* and BJP Vote Share, with Controls

Outcome: BJP Vote Share 1991

	yatra coefficients											
	w/o assassination						with assassination					
	prior compete			full sample			prior compete			full sample		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
baseline	5.18***	4.40**	4.46**	5.70***	4.58***	4.59***	9.29***	8.05***	8.30***	7.57***	6.16***	6.23***
	(1.83)	(1.77)	(1.77)	(1.46)	(1.43)	(1.43)	(2.63)	(2.55)	(2.55)	(2.26)	(2.21)	(2.21)
brahmins	5.11***	4.36**	4.42**	5.56***	4.49***	4.49***	9.30***	8.09***	8.34***	7.39***	6.03***	6.09***
	(1.81)	(1.75)	(1.75)	(1.46)	(1.43)	(1.43)	(2.62)	(2.54)	(2.53)	(2.26)	(2.21)	(2.21)
muslims	5.14***	4.41**	4.48**	5.78***	4.71***	4.72***	8.95***	7.78***	8.04***	7.39***	6.03***	6.09***
	(1.81)	(1.75)	(1.75)	(1.41)	(1.38)	(1.39)	(2.63)	(2.55)	(2.55)	(2.20)	(2.14)	(2.14)
SC/ST	4.96***	4.05**	4.04**	5.73***	4.56***	4.55***	9.11***	7.69***	7.97***	7.60***	6.11***	6.17***
	(1.82)	(1.74)	(1.74)	(1.46)	(1.42)	(1.42)	(2.62)	(2.51)	(2.50)	(2.26)	(2.20)	(2.20)
caste fragm	4.79**	4.21**	4.23**	5.62***	4.51***	4.51***	8.19***	7.23***	7.44***	7.47***	6.05***	6.12***
	(1.86)	(1.81)	(1.82)	(1.46)	(1.43)	(1.43)	(2.67)	(2.60)	(2.60)	(2.27)	(2.21)	(2.21)
princely state	5.71***	4.99***	5.04***	5.79***	4.72***	4.72***	9.18***	8.13***	8.36***	7.46***	6.11***	6.19***
	(1.88)	(1.84)	(1.84)	(1.43)	(1.40)	(1.40)	(2.64)	(2.58)	(2.58)	(2.22)	(2.16)	(2.16)
zamindar	5.52***	4.87***	4.90***	5.83***	4.72***	4.72***	9.40***	8.35***	8.60***	7.65***	6.28***	6.35***
	(1.85)	(1.81)	(1.81)	(1.45)	(1.42)	(1.42)	(2.61)	(2.56)	(2.55)	(2.25)	(2.20)	(2.20)
manufacturing workforce	5.02***	4.45**	4.52**	5.71***	4.61***	4.61***	9.20***	7.87***	8.22***	7.60***	6.11***	6.18***
	(1.85)	(1.77)	(1.77)	(1.46)	(1.42)	(1.42)	(2.63)	(2.54)	(2.54)	(2.26)	(2.20)	(2.20)
urbanization rate	3.53*	3.03*	3.05*	4.89***	4.01***	4.00***	7.52***	6.56**	6.87***	6.61***	5.47**	5.54**
	(1.86)	(1.79)	(1.80)	(1.46)	(1.43)	(1.43)	(2.64)	(2.55)	(2.54)	(2.25)	(2.20)	(2.20)
paved roads	5.42***	4.59***	4.67***	5.77***	4.60***	4.61***	9.35***	8.00***	8.35***	7.32***	5.84***	5.92***
	(1.83)	(1.76)	(1.76)	(1.44)	(1.41)	(1.41)	(2.62)	(2.52)	(2.52)	(2.25)	(2.18)	(2.19)
irrigation	5.08***	4.21**	4.26**	5.48***	4.35***	4.35***	8.89***	7.41***	7.71***	7.04***	5.58**	5.64***
	(1.79)	(1.71)	(1.71)	(1.44)	(1.40)	(1.40)	(2.60)	(2.48)	(2.48)	(2.24)	(2.17)	(2.17)
1984 X 1989 controls	no	yes	no	no	yes	no	no	yes	no	no	yes	no
1989 - 1984 controls	no	no	yes	no	no	yes	no	no	yes	no	no	yes

Notes: The coefficients given are for the *yatra* variable from baseline regression. Each row includes the indicated variable as a control. Columns (1)-(3) and (7)-(9) use only the constituencies in which the BJP had competed in 1989; columns (4)-(6) and (10)-(11) include all constituencies. The specifications in columns (7)-(12) also include the interaction term of the *yatra* and the assassination as a control. Controls are included as in the baseline regressions, and the error terms are iid.

Table 2.7: *Yatra* and Main Roads

Outcome: BJP Vote Share 1991

	yatra coefficients											
	w/o assassination						with assassination					
	prior compete			full sample			prior compete			full sample		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
main road (500)	5.15***	4.59**	4.61**	5.75***	4.66***	4.66***	9.04***	8.03***	8.26***	7.63***	6.25***	6.31***
	(1.93)	(1.87)	(1.88)	(1.47)	(1.44)	(1.44)	(2.68)	(2.61)	(2.61)	(2.28)	(2.22)	(2.22)
main road (400)	5.14***	4.57**	4.60**	5.74***	4.66***	4.66***	9.03***	8.02***	8.25***	7.62***	6.24***	6.31***
	(1.93)	(1.87)	(1.88)	(1.47)	(1.44)	(1.44)	(2.68)	(2.61)	(2.61)	(2.28)	(2.22)	(2.22)
main road (300)	5.13***	4.55**	4.58**	5.74***	4.65***	4.65***	9.01***	8.00***	8.23***	7.62***	6.24***	6.30***
	(1.93)	(1.87)	(1.88)	(1.47)	(1.44)	(1.44)	(2.68)	(2.61)	(2.61)	(2.28)	(2.22)	(2.22)
main road (200)	5.11***	4.53**	4.56**	5.73***	4.64***	4.64***	9.00***	7.98***	8.21***	7.61***	6.23***	6.29***
	(1.93)	(1.88)	(1.88)	(1.48)	(1.44)	(1.44)	(2.68)	(2.61)	(2.61)	(2.28)	(2.22)	(2.22)
main road (100)	5.07***	4.48**	4.51**	5.71***	4.62***	4.62***	8.97***	7.94***	8.17***	7.59***	6.21***	6.27***
	(1.94)	(1.88)	(1.88)	(1.48)	(1.44)	(1.45)	(2.68)	(2.61)	(2.61)	(2.28)	(2.22)	(2.22)
main road (50)	5.01**	4.42**	4.44**	5.68***	4.60***	4.60***	8.91***	7.88***	8.11***	7.56***	6.18***	6.24***
	(1.93)	(1.88)	(1.88)	(1.47)	(1.44)	(1.44)	(2.68)	(2.61)	(2.61)	(2.28)	(2.22)	(2.22)
main road (10)	4.90**	4.27**	4.30**	5.55***	4.47***	4.47***	8.74***	7.68***	7.90***	7.36***	6.01***	6.06***
	(1.91)	(1.85)	(1.86)	(1.47)	(1.44)	(1.44)	(2.69)	(2.61)	(2.61)	(2.28)	(2.22)	(2.22)
1984 X 1989 controls	no	yes	no	no	yes	no	no	yes	no	no	yes	no
1989 - 1984 controls	no	no	yes	no	no	yes	no	no	yes	no	no	yes

Notes: The coefficients given are for the *yatra* variable from baseline regression. Each row includes the mainroad control using the indicated distance parameter. Columns (1)-(3) and (7)-(9) use only the constituencies in which the BJP had competed in 1989; columns (4)-(6) and (10)-(11) include all constituencies. The specifications in columns (7)-(12) also include the interaction term of the *yatra* and the assassination as a control. Controls are included as in the baseline regressions, and the error terms are iid.

Table 2.8: Heterogeneous *Yatra* Effects

Outcome: BJP Vote Share 1991

	yatra coefficients and interaction terms					
	prior compete			full sample		
	(1)	(2)	(3)	(4)	(5)	(6)
yatra	5.32***	4.69**	6.41***	5.42***	4.29***	4.29***
	(1.89)	(1.83)	(2.06)	(1.46)	(1.43)	(1.43)
X brahmins	-1.20	-1.50	-2.43	-2.28	-2.89	-2.94
	(2.32)	(2.24)	(2.57)	(1.91)	(1.85)	(1.85)
yatra	7.85***	7.13***	8.84***	9.35***	7.69***	7.81***
	(2.68)	(2.61)	(2.99)	(2.18)	(2.15)	(2.14)
X muslims	6.19	5.97	5.84	8.43**	6.98*	7.22*
	(4.59)	(4.44)	(5.05)	(3.95)	(3.85)	(3.84)
yatra	5.01***	4.21**	5.80***	5.73***	4.55***	4.55***
	(1.88)	(1.81)	(2.05)	(1.46)	(1.42)	(1.43)
X SC/ST	-1.69	-1.33	-0.92	0.78	1.07	1.10
	(2.13)	(2.05)	(2.33)	(1.60)	(1.55)	(1.56)
yatra	3.98	3.75	5.53	4.61***	3.75**	3.73**
	(3.24)	(3.14)	(3.49)	(1.72)	(1.68)	(1.68)
X caste fragm	1.74	1.00	0.93	2.94	2.25	2.31
	(5.67)	(5.50)	(6.20)	(2.68)	(2.60)	(2.60)
yatra	5.88***	5.11***	6.98***	5.93***	5.19***	5.23***
	(2.00)	(1.95)	(2.18)	(1.56)	(1.52)	(1.52)
X princely state	-0.38	-0.24	-0.39	-0.23	-0.82	-0.91
	(1.37)	(1.33)	(1.50)	(1.07)	(1.04)	(1.04)
yatra	5.52***	4.88***	6.45***	5.84***	4.69***	4.70***
	(1.86)	(1.81)	(2.06)	(1.46)	(1.43)	(1.43)
X zamindar	0.00	-0.75	-1.57	0.11	-0.24	-0.21
	(1.37)	(1.35)	(1.54)	(1.15)	(1.12)	(1.13)
yatra	5.31***	4.78**	6.70***	5.81***	4.70***	4.71***
	(1.95)	(1.88)	(2.16)	(1.48)	(1.45)	(1.45)
X pct manuf	-0.63	-0.63	-1.33	-0.52	-0.45	-0.50
	(1.53)	(1.51)	(1.67)	(1.37)	(1.35)	(1.36)
yatra	3.74*	3.32	4.70**	5.12***	4.21***	4.22***
	(2.07)	(2.01)	(2.29)	(1.57)	(1.54)	(1.54)
X urbanization	-0.12	-0.16	-0.42	-0.40	-0.35	-0.38
	(1.19)	(1.16)	(1.34)	(1.01)	(0.99)	(1.00)
yatra	6.04***	5.75***	7.50***	5.70***	4.56***	4.57***
	(2.15)	(2.07)	(2.36)	(1.46)	(1.43)	(1.43)
X paved roads	0.98	2.02	2.65	-0.46	-0.29	-0.27
	(2.22)	(2.15)	(2.50)	(1.47)	(1.43)	(1.43)
yatra	4.43**	3.18	4.08*	4.05**	3.02*	3.06*
	(2.16)	(2.08)	(2.41)	(1.61)	(1.57)	(1.57)
X irrigation	-1.51	-2.43	-4.09	-3.29*	-3.08*	-3.00*
	(2.37)	(2.27)	(2.63)	(1.72)	(1.66)	(1.67)
1984 X 1989 controls	no	yes	no	no	yes	no
1989 - 1984 controls	no	no	yes	no	no	yes

Notes: The coefficients given are for the *yatra* and its interaction with the indicated control variable using the baseline specification. The control variables are demeaned by the mean for non-*yatra* constituencies, and divided by the standard deviation. Columns (1)-(3) use only constituencies contested in 1989; columns (4)-(6) use all constituencies. Errors are iid.

Table 2.9: *Yatra*, BJP Vote Share, and Persistence

Outcome: BJP Vote Share 1996	prior compete			full sample		
	(1)	(2)	(3)	(4)	(5)	(6)
yatra	4.533*	3.741	4.265	6.146**	5.028*	5.205*
	(2.558)	(2.480)	(2.629)	(2.899)	(2.704)	(2.766)
yatra X post-assassin	-10.824*	-10.382*	-10.955*	-4.281	-4.028	-4.286
	(5.739)	(5.649)	(5.879)	(4.729)	(4.504)	(4.605)
ayodhya	7.092***	9.696***	8.021***	4.224***	5.616***	5.120***
	(2.566)	(2.999)	(2.702)	(1.539)	(1.606)	(1.557)
riot	3.440	3.524*	3.415	2.428	2.632	2.708
	(2.099)	(2.096)	(2.102)	(1.781)	(1.777)	(1.796)
post-assassin	1.766	0.644	1.547	-2.296	-2.887*	-2.653*
	(2.171)	(2.179)	(2.206)	(1.544)	(1.528)	(1.540)
SC/ST	3.875	3.877	3.956*	2.573*	2.494*	2.532*
	(2.383)	(2.361)	(2.380)	(1.329)	(1.291)	(1.290)
BJP1984		0.520**			0.353***	
		(0.222)			(0.113)	
BJP1984 X BJP1989		-0.010**			-0.006**	
		(0.004)			(0.003)	
BJP1989 - BJP1984			-0.201			-0.228***
			(0.154)			(0.082)
BJP1989 - BJP1984 SQ			0.003			0.003
			(0.003)			(0.002)
R-squared	0.726	0.731	0.725	0.672	0.679	0.677
N	197	194	194	434	425	425

Notes: Each column gives the results of a regression of the BJP's 1996 vote share on the indicated variables. Columns (1)-(3) include only the sample of constituencies contested by the BJP in 1989; and columns (4)-(6) all constituencies. Controls are also included for the BJP's 1989 vote share, state fixed effects, and the interaction of the two. Error terms are iid.

Table 2.10: *Yatra* and BJP Victory

Outcome: BJP 1991	w/o assassination						with assassination					
	prior compete			full sample			prior compete			full sample		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
yatra	0.078	0.072	0.067	0.133**	0.097	0.096	0.249*	0.234*	0.219	0.232**	0.186*	0.184*
	(0.095)	(0.095)	(0.095)	(0.062)	(0.062)	(0.062)	(0.135)	(0.134)	(0.135)	(0.096)	(0.096)	(0.096)
yatra X post-assassin							-0.319*	-0.300*	-0.283	-0.166	-0.146	-0.146
							(0.179)	(0.177)	(0.179)	(0.122)	(0.121)	(0.121)
ayodhya	0.353	0.320	0.361	-0.001	0.026	0.031	0.371	0.335	0.379	-0.004	0.022	0.028
	(0.416)	(0.413)	(0.414)	(0.136)	(0.136)	(0.135)	(0.414)	(0.410)	(0.412)	(0.136)	(0.136)	(0.135)
post-assassin	-0.195**	-0.177**	-0.197**	-0.069	-0.081*	-0.083*	-0.146	-0.130	-0.154*	-0.056	-0.069	-0.071
	(0.087)	(0.087)	(0.087)	(0.046)	(0.046)	(0.046)	(0.091)	(0.091)	(0.091)	(0.047)	(0.047)	(0.047)
riot	0.016	-0.011	-0.011	0.053	0.050	0.050	0.004	-0.022	-0.020	0.049	0.047	0.047
	(0.090)	(0.089)	(0.090)	(0.053)	(0.052)	(0.052)	(0.089)	(0.089)	(0.090)	(0.053)	(0.052)	(0.052)
SC/ST	-0.095	-0.098	-0.099	-0.064	-0.071*	-0.071*	-0.088	-0.091	-0.093	-0.062	-0.069*	-0.069*
	(0.081)	(0.080)	(0.080)	(0.041)	(0.041)	(0.041)	(0.081)	(0.080)	(0.080)	(0.041)	(0.041)	(0.041)
BJP1984		-0.006			0.007**			-0.006			0.007**	
		(0.008)			(0.003)			(0.008)			(0.003)	
BJP1984 X BJP1989		0.000*			0.000			0.000*			0.000	
		(0.000)			(0.000)			(0.000)			(0.000)	
BJP1989 - BJP1984			-0.002			-0.008***			-0.003			-0.008***
			(0.006)			(0.002)			(0.006)			(0.002)
BJP1989 - BJP1984 SQ			-0.000			-0.000			-0.000			-0.000
			(0.000)			(0.000)			(0.000)			(0.000)
R-squared	0.408	0.431	0.425	0.446	0.466	0.465	0.419	0.441	0.434	0.449	0.468	0.467
N	197	194	194	434	425	425	197	194	194	434	425	425

Notes: Each column gives the results of a regression of the BJP's victory in 1991 on the indicated variables. Columns (1)-(3) and (7)-(9) include only constituencies previously contested; columns (4)-(6) and (10)-(12) use all constituencies. Columns (7)-(12) include the interaction of the *yatra* with the assassination dummy. Controls are also included for the BJP's 1989 vote share, state fixed effects, and the interaction of the two. Error terms are iid.

Table 2.11: *Yatra* and Riots

	any riot		pre-*yatra* riot		post-*yatra* riot		*yatra* riot	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
yatra	0.139***	0.109**	0.092***	0.060*	0.056*	0.020	0.128***	0.116***
	(0.049)	(0.052)	(0.029)	(0.032)	(0.033)	(0.035)	(0.038)	(0.040)
state FEs	no	yes	no	yes	no	yes	no	yes
R-squared	0.017	0.079	0.021	0.059	0.006	0.113	0.024	0.090
N	482	482	482	482	482	482	482	482

Notes: The tables give the results of a regression of riot variables on the *yatra* dummy, with state fixed effects included where indicated. Columns (1)-(2) use as the outcome a dummy for any riot occurring between the 1989 and 1991 elections. Columns (3)-(4) use as the outcome a dummy for any riot occurring after the 1989 election but before the *yatra*; columns (5)-(6) riots occurring after the *yatra* and before the 1991 election; and columns (7)-(8) riots occurring at the time of the *yatra*.

Table 2.12: *Yatra* and Riots, with Controls

	yatra riot								pre-*yatra* riot	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
yatra	0.104***	0.096**	0.092**	0.090**	0.087**	0.095**	0.079**	0.090**	0.060**	0.045
	(0.039)	(0.041)	(0.039)	(0.041)	(0.039)	(0.040)	(0.039)	(0.040)	(0.030)	(0.032)
pre-*yatra* riot			0.166***	0.125**			0.126**	0.102*		
			(0.059)	(0.059)			(0.059)	(0.059)		
pre-1989 riot					0.129***	0.105***	0.119***	0.099***	0.078***	0.065***
					(0.028)	(0.031)	(0.028)	(0.031)	(0.022)	(0.024)
BJP1989	0.001**	0.002***	0.001*	0.002***	0.001	0.002***	0.001	0.002**	0.001**	0.001**
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.000)	(0.001)
state FEs	no	yes	no	yes	no	yes	no	yes	no	yes
R-squared	0.032	0.106	0.048	0.114	0.073	0.128	0.082	0.134	0.058	0.087
N	482	482	482	482	482	482	482	482	482	482

Notes: Columns (1)-(6) give the results of a regression of a dummy for riots occurring during the *yatra* on the indicated variables, with and without state fixed effects. Columns (9)-(10) use as the outcome variable a dummy for riots occurring after the 1989 election and before the *yatra*. Error terms are iid.

Table 2.13: *Yatra*, BJP Vote Share, and Riot Events

Outcome: BJP Vote Share 1991	event dummy						number of events					
	prior compete			full sample			prior compete			full sample		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Panel A: Riots												
yatra	5.30***	4.96***	4.19**	5.70***	5.77***	5.70***	5.27***	5.21***	4.51**	5.75***	5.83***	5.74***
	(1.88)	(1.90)	(2.01)	(1.46)	(1.47)	(1.54)	(1.89)	(1.93)	(2.00)	(1.47)	(1.46)	(1.53)
riot	1.36			3.60***			0.45			0.86**		
	(1.77)			(1.25)			(0.66)			(0.43)		
yatra riot X *yatra*			5.28			0.60			4.56			0.51
			(4.45)			(3.78)			(3.48)			(2.52)
yatra riot		2.20	0.54		3.61**	3.48*		2.53	0.29		3.23***	3.14**
		(2.33)	(2.72)		(1.69)	(1.90)		(2.05)	(2.67)		(1.17)	(1.25)
pre-*yatra* riot		2.91	1.85		-0.86	-0.93		-0.40	-0.89		-1.92	-1.93
		(2.91)	(3.04)		(2.25)	(2.30)		(1.69)	(1.73)		(1.36)	(1.37)
post-*yatra* riot		-0.96	-1.10		3.02	3.00		-0.35	-0.66		0.52	0.48
		(2.94)	(2.94)		(1.99)	(2.00)		(1.25)	(1.27)		(0.91)	(0.93)
Panel B: Riot Deaths												
yatra	5.26***	4.83**	4.29**	5.59***	5.67***	5.77***	5.30***	4.83**	4.39**	5.67***	5.64***	5.70***
	(1.88)	(1.89)	(1.96)	(1.45)	(1.46)	(1.51)	(1.87)	(1.88)	(1.92)	(1.46)	(1.47)	(1.50)
deaths	1.59			4.83***			0.71			1.96***		
	(2.02)			(1.42)			(0.89)			(0.64)		
yatra deaths X *yatra*			4.90			-1.08			3.79			-0.61
			(4.80)			(4.25)			(3.52)			(2.81)
yatra deaths		1.59	-0.20		4.66**	4.88**		0.32	-1.46		2.37**	2.46**
		(2.59)	(3.12)		(1.88)	(2.07)		(1.89)	(2.51)		(1.06)	(1.14)
pre-*yatra* deaths		6.51*	5.25		0.91	1.06		4.18**	3.14		1.44	1.57
		(3.80)	(4.00)		(2.84)	(2.90)		(2.07)	(2.28)		(1.74)	(1.85)
post-*yatra* deaths		-1.66	-1.52		1.97	2.00		-0.91	-0.61		0.52	0.52
		(3.07)	(3.08)		(2.20)	(2.20)		(1.36)	(1.39)		(0.95)	(0.95)

Notes: This tables gives the results from regressions of riot events on the indicated variables. In panel A, the outcomes are dummies for riots in columns (1)-(6), and the number of riots in columns (7)-(12). In panel B the outcomes are dummies for the incidence of any riot death in columns (1)-(6), and the log of the number of riot deaths in columns (7)-(12). The samples are those indicated. State fixed effects are included, and error terms are iid.

Table 2.14: *Yatra* and BJP Vote Share Across Sub-Samples

Outcome: BJP Voteshare 1991	*yatra* coefficients											
	w/o assassination						with assassination					
	prior compete			full sample			prior compete			full sample		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Panel A: All States												
full sample	5.97***	5.44***	5.52***	7.46***	6.04***	6.03***	9.13***	8.11***	8.35***	10.77***	8.57***	8.63***
	(1.80)	(1.76)	(1.76)	(1.43)	(1.40)	(1.40)	(2.64)	(2.59)	(2.59)	(2.17)	(2.13)	(2.13)
w/o cities	5.30***	4.64**	4.68**	5.70***	4.58***	4.59***	9.19***	8.10***	8.34***	7.57***	6.16***	6.23***
	(1.88)	(1.82)	(1.83)	(1.46)	(1.43)	(1.43)	(2.65)	(2.58)	(2.58)	(2.26)	(2.21)	(2.21)
w/o cities and target PCs	4.52**	3.84*	3.75*	5.75***	4.42***	4.38***	8.06**	6.90**	7.07**	6.67**	5.13**	5.16**
	(2.12)	(2.07)	(2.07)	(1.61)	(1.58)	(1.58)	(3.22)	(3.15)	(3.15)	(2.64)	(2.58)	(2.58)
Panel B: Selected States												
full sample	5.97***	5.38***	5.48***	7.46***	6.01***	6.00***	9.14***	8.02***	8.30***	10.76***	8.51***	8.57***
	(1.91)	(1.87)	(1.87)	(1.48)	(1.45)	(1.45)	(2.81)	(2.75)	(2.75)	(2.25)	(2.21)	(2.21)
w/o cities	5.29***	4.57**	4.63**	5.69***	4.55***	4.56***	9.19***	8.00***	8.29***	7.58***	6.12***	6.20***
	(1.99)	(1.94)	(1.94)	(1.51)	(1.48)	(1.48)	(2.81)	(2.74)	(2.74)	(2.34)	(2.29)	(2.29)
w/o cities and target PCs	4.52**	3.79*	3.71*	5.77***	4.41***	4.38***	8.07**	6.83**	7.04**	6.71**	5.14*	5.17*
	(2.25)	(2.20)	(2.21)	(1.66)	(1.64)	(1.64)	(3.42)	(3.35)	(3.34)	(2.74)	(2.67)	(2.67)
Panel C: *Yatra* States												
full sample	5.69***	4.88**	5.20**	7.93***	7.03***	7.04***	7.90**	6.72**	7.35**	13.01***	11.34***	11.39***
	(2.07)	(2.06)	(2.05)	(1.68)	(1.64)	(1.64)	(3.07)	(3.04)	(3.04)	(2.60)	(2.58)	(2.58)
w/o cities	5.05**	4.01*	4.29**	6.13***	5.47***	5.47***	7.96**	6.64**	7.33**	9.65***	8.66***	8.69***
	(2.15)	(2.13)	(2.13)	(1.68)	(1.66)	(1.66)	(3.06)	(3.02)	(3.00)	(2.68)	(2.64)	(2.65)
w/o cities and target PCs	4.44*	3.46	3.49	6.05***	5.33***	5.32***	6.93*	5.74	6.19*	8.83***	7.83**	7.85**
	(2.42)	(2.41)	(2.41)	(1.86)	(1.85)	(1.85)	(3.69)	(3.67)	(3.65)	(3.21)	(3.18)	(3.18)
1984 X 1989 controls	no	yes	no	no	yes	no	no	yes	no	no	yes	no
1989 - 1984 controls	no	no	yes	no	no	yes	no	no	yes	no	no	yes

Notes: This table gives the coefficients on the *yatra* variable from the baseline regressions using the indicated samples. Panel A uses all 15 states in the sample; panel B drops the states of Kerala and Tamil Nadu from the sample; panel C includes only the states through which the *yatra* passed, excluding Haryana and Karnataka, in which only a small number of constituencies were visited. Columns (7)-(12) include the interaction of the *yatra* and assassination as controls; and the samples are as indicated. Error terms are iid.

Table 2.15: *Yatra*, BJP Vote Share, and Prior Elections

Outcome: BJP Vote Share	1991				1989			
	w/o assassin		with assassin		w/o assassin		with assassin	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
yatra	5.608***	4.936***	9.543***	6.915**	-0.581	-0.561	2.391	2.251
	(1.210)	(0.962)	(2.670)	(2.983)	(1.514)	(1.338)	(3.668)	(3.424)
riot	1.150	3.662**	0.992	3.780**	-0.239	-0.200	-0.221	-0.174
	(1.555)	(1.543)	(1.655)	(1.554)	(0.144)	(0.152)	(0.147)	(0.150)
yatra X post-assassin			-8.418*	-6.479			-7.539	-6.420
			(3.996)	(4.525)			(8.377)	(7.256)
post-assassin			-1.775	-1.787			-0.036	-0.627
			(1.837)	(1.387)			(1.964)	(2.801)
prior-compete	yes		yes		yes		yes	
full sample		yes		yes		yes		yes
N	197	434	197	434	132	203	132	203
R-squared	0.806	0.778	0.789	0.757	0.772	0.825	0.777	0.828

Notes: Columns (1)-(4) give the results from the baseline regressions, with the 1991 BJP vote share as the outcome. Columns (5)-(8) give the results from the baseline regressions, now using the 1989 BJP vote share as the outcome. In the latter regression the riot dummies indicate the occurrence of a riot between the 1984 and 1989 elections; and controls are included for the 1984 vote share, state fixed effects, and the interaction of the two. Error terms are iid. Columns (1), (3), (5), and (7) include only constituencies previously contested. Columns (2), (4), (6), and (8) include the full sample.

Table 2.16: *Yatra* and Local Public Goods

	yatrasubdist coefficient									
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
drinking water						health facilities				
any	0.007***	0.010***	0.007**	0.010***	0.008***	health center	-0.000	-0.001	-0.001	-0.002	-0.000
	(0.002)	(0.003)	(0.003)	(0.003)	(0.003)		(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
tap	0.048**	0.039**	0.046**	0.036*	0.022**	primary health center	0.007*	0.007**	0.005	0.005	0.009***
	(0.019)	(0.018)	(0.020)	(0.019)	(0.011)		(0.004)	(0.003)	(0.004)	(0.003)	(0.003)
well	0.017	0.001	0.012	-0.005	-0.017	health sub-center	0.023*	0.038***	0.020	0.035***	0.031***
	(0.031)	(0.034)	(0.032)	(0.035)	(0.017)		(0.012)	(0.011)	(0.012)	(0.012)	(0.009)
hand pump	0.069***	0.051**	0.072***	0.053**	-0.003	maternity-child	-0.006	-0.005	-0.006	-0.005	0.001
	(0.021)	(0.024)	(0.021)	(0.024)	(0.018)		(0.005)	(0.004)	(0.005)	(0.004)	(0.004)
tube well	0.048*	0.025	0.043	0.018	0.029	hospital	-0.008*	-0.010**	-0.009**	-0.012***	-0.006
	(0.029)	(0.029)	(0.029)	(0.029)	(0.022)		(0.005)	(0.004)	(0.005)	(0.004)	(0.004)
river	0.000	0.002	0.003	0.005	-0.012	dispensary	-0.008	-0.003	-0.010	-0.005	0.005
	(0.014)	(0.016)	(0.014)	(0.016)	(0.010)		(0.007)	(0.006)	(0.007)	(0.006)	(0.004)
any	0.020	0.030*	0.016	0.026	0.021*	any	0.030**	0.030***	0.027**	0.026**	0.019*
	(0.016)	(0.017)	(0.017)	(0.017)	(0.012)		(0.012)	(0.012)	(0.013)	(0.012)	(0.010)
domestic	0.042**	0.053***	0.035**	0.045**	0.028**	tank	-0.007	-0.007	-0.007	-0.007	-0.009***
	(0.017)	(0.019)	(0.017)	(0.019)	(0.013)		(0.007)	(0.006)	(0.007)	(0.006)	(0.003)
agricultural	0.043**	0.042**	0.036**	0.035*	0.030*	private canal	-0.003**	-0.002	-0.003**	-0.002	-0.001
	(0.018)	(0.019)	(0.018)	(0.019)	(0.015)		(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
industrial	0.045***	0.056***	0.036**	0.046**	0.016	government canal	0.023*	0.018	0.024*	0.019	0.001
	(0.015)	(0.020)	(0.015)	(0.019)	(0.017)		(0.014)	(0.013)	(0.014)	(0.014)	(0.008)
						well (electrified)	0.006	0.004	0.006	0.003	0.015**
post office	-0.006	0.012	-0.010	0.007	0.023***		(0.009)	(0.008)	(0.009)	(0.009)	(0.006)
	(0.012)	(0.012)	(0.013)	(0.012)	(0.008)	well (non-elec)	0.008	0.004	0.007	0.003	0.005
telegraph	0.005	0.005	0.003	0.003	0.006		(0.007)	(0.006)	(0.007)	(0.006)	(0.006)
	(0.005)	(0.004)	(0.005)	(0.004)	(0.005)	tubewell (electrified)	0.011	0.015	0.011	0.014	0.021**
telephone	0.073***	0.074***	0.059**	0.058**	0.076***		(0.017)	(0.019)	(0.017)	(0.019)	(0.009)
	(0.028)	(0.028)	(0.028)	(0.028)	(0.016)	tube well (non-elec)	-0.010*	-0.006	-0.014**	-0.010*	-0.013**
paved roads	0.021*	0.030**	0.014	0.023	0.034***		(0.006)	(0.005)	(0.006)	(0.006)	(0.005)
	(0.013)	(0.015)	(0.013)	(0.015)	(0.012)	uncultivated	0.004	0.002	0.005	0.003	-0.004
							(0.008)	(0.008)	(0.008)	(0.008)	(0.006)
any	0.017***	0.020***	0.017***	0.020***	0.013***						
	(0.005)	(0.005)	(0.005)	(0.006)	(0.005)						
primary	0.013***	0.017***	0.012**	0.016***	0.011**						
	(0.005)	(0.005)	(0.005)	(0.006)	(0.005)						
middle	0.015	0.017	0.012	0.013	0.021***						
	(0.011)	(0.013)	(0.010)	(0.013)	(0.008)						
high	0.008	0.010	0.007	0.008	0.013**						
	(0.008)	(0.008)	(0.008)	(0.008)	(0.006)						
adult literacy	0.008	0.005	0.009	0.005	-0.000						
	(0.015)	(0.015)	(0.015)	(0.015)	(0.013)						
main road	no	no	yes	yes	yes		no	no	yes	yes	yes
yatra constituency	no	yes	no	yes	no		no	yes	no	yes	no
constituency FEs	no	no	no	no	yes		no	no	no	no	yes

Notes: This table gives the results of a regression of the indicated public good on a dummy indicating the passage of the *yatra* through a sub-district. The unit of observation is the sub-district. Controls are included for the level of the indicated public good in 1991. A cubic is included in the BJP's 1989 vote share and a dummy for the party's victory in 1989. In addition, each column includes the controls included for a main road passing through the sub-district, the district being a constituency visited by the *yatra*, and constituency fixed effects. Errors are clustered at the sub-district level.

Chapter 3

Expanding Educational Opportunities in Remote Parts of the World: Evidence from an RCT of a Public-Private Partnership in Pakistan

3.1 Introduction

The promotion of universal primary education is an important policy priority, as reflected in such initiatives as the Millennium Development Goals and the Education for All movement. Considerable progress has been made in recent years in raising primary education levels; nonetheless, large gaps persist in regions such as Sub-Saharan Africa, West and Southwestern Asia, and South Asia (Hausmann *et al.*, 2012). Finding viable strategies for improving educational attainment is of paramount importance to donors and policy-makers. Our research explores the feasibility of low-cost public-private partnerships for extending educational opportunity to marginal, underserved communities in developing countries.

A central challenge in this final push for universal enrollment is the inequality in educational opportunity between boys and girls. It is estimated that women constitute two-thirds of the world's illiterate adults and 54% of un-enrolled school-age children (UNESCO, 2010). A separate but related issue is the rural-urban divide in educational opportunity: within developing countries, enrollment rates in rural areas tend to lag those in urban locations (UN, 2008a), with the gender disparity in enrollment being driven primarily by inequalities in rural areas (UN, 2008b).

Both supply and demand considerations have been invoked to explain low levels of primary enrollment. Though some research has found school access to be a negligible factor in explaining low enrollment rates, arguing for the importance of demand-side factors,[1] a substantial literature has found access to be highly important, and often entirely decisive, for enrollment.[2] Gender disparities in enrollment are often attributed to a lower parental

[1]Filmer (2007), for example, examines the relationship between enrollment and availability using DHS data from 21 countries; the design is primarily cross-sectional, and controls for endogeneity concerns through the inclusion of possibly confounding socio-economic variables, as well as though the use of a partial panel component. The author finds little evidence that school access is important to enrollment rates.

[2]Duflo (2001) and Foster and Rosenzweig (1996) are two early papers showing the importance of school availability for enrollment, in Indonesia and India, respectively. More recently, Burde and Linden (2013),

demand for child education, though even here supply factors have been found to play an important role, with girls having important economic responsibilities within the household, or facing additional physical insecurities in transiting to-and-from school.[3]

The intervention we evaluate entailed the provision of schools through public-private partnerships to 161 villages randomly chosen from a sample of 199 qualifying locales. Private entrepreneurs were given the responsibility of establishing and operating primary schools, to which all local children between the ages of 5 and 9 were eligible for free enrollment, with the entrepreneurs receiving a per-child subsidy from the Sindh provincial government. In addition, in half of the treatment villages the subsidy scheme was structured such that entrepreneurs received a higher subsidy for girls than boys. The introduction of program schools leads to large gains in enrollment: overall, treatment villages see a 30 percentage points increase in enrollment for children within the target age group, and a 12 percentage points increase in enrollment for older children. Test scores increase by 0.67 standard deviations in treatment villages, and by 2.01 standard deviations for children induced to enroll by the introduction of program schools. These effects are the same for boys and girls; while the subsidy providing enhanced compensation for girls shows no greater effectiveness in inducing

using an RCT design in rural Afghanistan, find positive effects of the presence of community-based schools, with villages receiving schools showing a 52 percentage point increase in enrollment for girls, and a 35 percentage points increase for boys, entirely removing the pre-existing gender gap. Kazianga *et al.* (2013) evaluate the enrollment effects of the BRIGHT program in Burkina Faso, which consisted of constructing primary schools and implementing a set of complementary interventions designed to increase girls' enrollment rates in villages where initial female enrollment was low. The authors find that school enrollment increased by 17.6 percentage points for boys and 22.2 percentage points for girls.

[3]With girls playing a larger role in domestic work than boys, the opportunity cost of female enrollment is higher than that of males, potentially contributing to educational disparities. Consistent with this, Glick and Sahn (2000) find that domestic responsibilities, represented by the number of very young siblings, have a strongly adverse effect on girls' enrollment but not on boys'. Similarly, Pitt and Rosenzweig (1990) find that daughters are more likely to increase their time in household work relative to school than their brothers in response to a younger sibling's illness. Females may be deemed more at risk of physical harm than males, thereby posing either a psychological cost for parents of allowing their daughters to walk long distances, or a pecuniary cost if this induces parents to pay for transportation. Consistent with this, several papers find that the distance to school appears to be a more significant deterrent to girls' enrollment than boys' (Alderman *et al.*, 2001; Lloyd *et al.*, 2005; Burde and Linden, 2013).

female enrollment than the equal-valued subsidy. Parents in treatment villages prefer that their boys have future careers as doctors and engineers, rather than security personnel; and that their girls become doctors, engineers, or teachers, rather than housewives.

3.2 Pakistan and the PPRS Program

3.2.1 Education in Pakistan

School participation is low in Pakistan, even in comparison with countries having a similar level of economic development (Andrabi *et al.*, 2008).[4] Nationwide, the primary school net enrollment rate[5] for children ages 5-9 is 56%: 60% for males and 51% for females. These national averages subsume large regional disparities: in the poorer, more rural provinces, net enrollment rates are lower for both sexes, and gender disparities higher. In the rural areas of Sindh province, for example, where the program was implemented, only 49% of males and 31% of females between the ages of 5 and 9 are enrolled in primary school (PSLM 2007).

An important development in recent years has been the rapid expansion of for-profit private education in Pakistan, with 35% of all primary-enrolled children attending private schools in 2000 (Andrabi *et al.*, 2008). The high level of private-school enrollment is a relatively recent phenomenon: private schools were once the preserve of the elite; in the last two decades, however, private-school education has become widely accessible even to those on the lower rungs of the socio-economic ladder. The cause of this change has been a dramatic expansion in the availability of low-cost private schools in poor urban neighborhoods and remote rural villages. These schools have succeeded along dimensions of both cost and qual-

[4]Using a simple regression of the net-enrollment rate on log per-capita income and its square for 138 countries, the authors show that the Pakistan's predicted net-enrollment rate is 77%, but its actual rate only 51%.

[5]Net enrollment is defined as the number of children aged 5 to 9 years attending primary level divided by the number of children aged 5 to 9.

ity: at an average $18 per year in villages, the cost represents a small fraction of household income (Andrabi *et al.*, 2008);[6] while student achievement levels have been better than in government schools, even controlling for village and household characteristics (Das *et al.*, 2006).

There exist large disparities, however, in the prevalence of private schooling across the provinces of Pakistan. In villages with private schools in Punjab province, 23% of children enrolled in primary school were in private schools, while only 11% of those in villages lacking private schools were so enrolled. In Sindh province, in contrast, the private enrollment rates were 5% and 2%, respectively.

3.2.2 PPRS Description

The intervention was implemented by the Sindh Education Foundation (SEF), a quasi-governmental agency of the Sindh provincial government. SEF was established in 1992 as a semi-autonomous organization to undertake education initiatives in less-developed areas, and among marginalized populations within Sindh province; and empowered to adopt non-conventional strategies in pursuit of this objective. Pursuant to this mandate, the SEF has undertaken a variety of programs, such as: supporting local communities in establishing and managing small schools, providing assistance to pre-existing low-cost private schools, enlisting the private sector for management of dysfunctional public schools, and promoting non-formal adult education.

The Promoting Low-Cost Private Schooling in Rural Sindh (PPRS) program, evaluated in this paper, is a notable example of the SEF's innovate innovative approach to extending educational access. Leveraging the fore-mentioned advantages of private education, the pro-

[6]The cost-effectiveness of these schools is attributable largely to their ability to recruit local women as teachers, to whom significantly lower wages can be paid due to the scarcity of alternative employment options in rural areas.

gram seeks to expand access to primary education in underserved rural communities through public-private partnerships with local entrepreneurs. In addition, through the submission of applications for villages they have identified as plausibly meeting the necessary criteria, the local entrepreneurs involved in the program play an important role in identifying the villages most needful of educational facilities.

Those private entrepreneurs selected through the vetting and randomization processes are granted a per-student cash subsidy to operate co-educational primary schools, as well as additional, non-monetary assistance to improve the quality of the education provided. Enrollment is tuition-free and open to all children in the village between the ages of 5 and 9 (extending by a year with additional cohorts), with the entrepreneur receiving directly an enrollment-based subsidy from the SEF, which is verified through surprise inspections.[7] In addition, to explore strategies for reducing the gender-gap, two different subsidy schemes were introduced. In the first, the entrepreneur is provided a monthly subsidy of 350 rupees (USD 4.7) for each child enrolled; while, in the second, the entrepreneur receives the same 350 rupees for each male student and 450 rupees for each female. These two schemes are termed the "Gender-Uniform subsidy" and "Gender-Differentiated subsidy" schemes, respectively.

By assigning local entrepreneurs responsibility for operating these schools, coupled with appropriate incentives and oversight from the government, the PPRS program seeks to take advantage of the local knowledge and underutilized resources within these communities to provide viable, appropriate, and affordable education in these remote, and previously neglected, areas. In addition, it is hoped that the gender-differentiated subsidy scheme, by providing a higher remuneration for girls relative to boy, will encourage the school operators to take specific measures that will be attractive to the parents of girls, such as hiring female teachers, providing safe transportation and a safe schooling environment, or even offering

[7]SEF determines the number of students using both school enrollment reports and surprise inspections.

small stipends to girls.

3.3 Methodology

3.3.1 Research Design

The program was first implemented on a pilot basis in 10 districts of Sindh province. These districts, shown in appendix figure B.1, were chosen to participate due to their being the most deprived in terms of educational resources.[8] Interested entrepreneurs were asked to apply to for the program by submitting proposals to set up and operate primary schools in rural communities within these districts. These proposals were vetted according to several criteria: sufficient distance to nearest school;[9] written assent from the parents of at least 75 children who would enroll their children in the program schools should they be established; and identification of a sufficient number of qualified teachers, with at least two being female,[10] and an adequate facility in which to hold classes. A total of 263 localities were deemed eligible, from which 200 were randomly selected to receive treatment. The 200 treatment villages were further subdivided equally by subsidy type.

A baseline survey was conducted in February 2009, for the purpose of vetting applications for final consideration. Following this, the 263 qualifying villages were randomly assigned to the two treatments and the control group, and the schools then established in the summer of 2009. Because the new school term normally commences in the spring, the students received

[8]Based on rankings determined by several indicators of educational deprivation – including the size of the out-of-school child population, the initial gender disparities in school participation, and the share of households at least 15 minutes away from the nearest primary school – the 10 lowest ranked districts were selected for participation.

[9]There could be no primary school within a 1.5 kilometers radius of the proposed school site. However, due to problems with the baseline survey, a number of villages were included that failed this criterion.

[10]The teachers were required to have, at minimum, an 8th grade education. This was set at a sufficiently high level that the teachers would have competence in primary education-level subjects, but low enough that qualified local women could be found.

an abbreviated term in their first year. An initial follow-up survey was conducted in June 2010.[11] In April/May 2011, a second follow-up survey was conducted, which was significantly more extensive in scope than the first.[12]

Table 1 summarizes the sample sizes across the three surveys, disaggregated by treatment status. There were 199 villages included in our sample, with 82 and 79 in treatment groups 1 and 2, respectively, and 38 in the control group.[13] The baseline data from these 199 villages included 2033 randomly selected households and 5556 children.[14] In these villages there were 8639 households with children between the ages of 5 and 15, and 25157 children within this age group, as determined during the first follow-up survey, which consisted of a complete census of each village. From each village up to 42 households were randomly selected for inclusion in the second follow-up survey; for villages with fewer than 42 households, which comprised the majority, all willing households were included in the second follow-up.[15] In total, 17721 children between the ages of 5 and 17 were included in the follow-up survey.[16]

[11]This consisted of a complete census of the villages. Because it occurred a year after commencement of the project, we employ the data collected as a follow-up survey.

[12]This survey was initially scheduled to commence just after the census. However, due to the widespread flooding occurring during in late-summer 2010, it was necessarily postponed.

[13]There were 237 villages for which data was collected in the baseline. An additional 38 villages were removed from the sample due to their being too large to be considered villages.

[14]The method by which the baseline data was the "spin-the-bottle" technique, whereby 12 households were chosen based on their being along a straight line determined by a bottle spun in the center of the village. Though this is the approach adopted by many development organizations, it falls short of representing a truly randomly drawn sample, and as such the results must be used with caution. However, insofar as the technique was employed consistently across treatment groups, the populations should still be roughly balanced if the randomization has been successful.

[15]Only households with at least one child between the ages of 5 and 9 at the time of the first follow-up were included in the sample.

[16]During the second follow-up survey, the age range of children was extended to 17. The reason for this change was two-fold: (1) to ensure coverage of children who were included in the first follow-up, but may have aged out of the 5-15 range by the time of the second follow-up; and (2) because the age requirement was difficult to enforce, meaning older children were often enrolled in the program schools.

3.3.2 Data

In the baseline survey, basic child and household information was collected for 12 randomly selected households in each village.[17] Among the details record were: age, gender, and enrollment status of all children between the ages of 5 and 9; the profession and education of the household head; and the number of individuals within the household. Data was also collected on teachers and building facilities proposed by the entrepreneur, as well as the availability of proximate primary schools.

In the first follow-up survey, information was collected for all households in the villages. Information was collected on the age, gender, and enrollment status of all children between the ages of 5 and 15. The caste, profession, and education of the household head were collected, as well as the number of adults, the amount of land owned by the household, and the building material of the family's house.

The second follow-up survey consisted of three elements: (1) a household survey, which included socio-economic questions on the household, a detailed module on child characteristics, parental preferences over various dimensions of the education of each young child, and questions on the characteristics of the schools in the village; (2) a school survey; and (3) a child survey, which included numeracy and literacy exams of 24 and 14 questions, respectively.

The household survey had three principal components. First, household-level characteristics were collected, covering details such as: the household head's profession and level of education; ownership of land, livestock, and other assets; income (both monetary and in-kind) and remittances; and attitude towards religion and social issues. Second, the respondent was asked the characteristics of every child in the house, covering items such as: age, gender, marital status, work within and outside the household, enrollment, and study

[17]The method of randomization was the "spin-the-bottle" technique.

habits. In addition, the respondent was asked their personal preference over the education of each child: for example, how important it is that the specified child receive instruction in topics such as mathematics and English, or that their teacher be female. Lastly, there was a school module, in which the respondent was asked to describe the characteristics of each school near to the village, and to rank them according to these characteristics.

The child survey was administered to each child between the ages of 5 and 10. A few basic questions were asked of the child regarding types of work done inside and outside the home, enrollment status, and their desired adulthood professions. Each child was then administered a language exam, consisting of 14 questions, and a math exam, with 24 questions.

The third element was the school survey. From the headmaster was collected information on various school characteristics such as: the number of years the school had been operational, its daily schedule, and the medium instruction; the overall characteristics of teachers at the school, including the number that are female, their educational qualification, and years of experience; and class sizes, tuition, and other fees. Through visual inspection, the enumerators established the physical characteristics of each school, covering the number of classrooms, desks, electrification, drinking water, and toilet facilities. In addition, each teacher was individually interviewed, with information being gathered on their age, teaching experience, educational qualifications, and salary; as well as the number of hours spent each week on different teaching activities, such as teaching small groups and individuals, administering exams, and enforcing discipline. Finally, attendance was taken of each class, with the attendance lists to be used during conduct of the household survey to verify child enrollment.

3.3.3 Statistical Models

The principal outcomes of interest are child enrollment and educational achievement, as measured by the numeracy and literacy exams, and the principal explanatory variable the

treatment status of the village. We will be also be interested in determining differential effects of the two treatment groups, across boys and girls. The baseline model used in the analysis is:

$$Y_i = \beta_0 + \beta_1 T_i + \beta_2 X_i + \varepsilon_{ij}, \tag{3.1}$$

where Y_i is the outcome of interest for child i, T_i is a dummy variable indicating whether child i lives in a village assigned a PPRS school, and X_i is a vector of socio-demographic controls. Standard errors are clustered at the village level, j. In alternative specifications, we disaggregate the two treatments, and include interactions of the treatment with the female dummy.

3.4 Internal Validity and Treatment Differential

3.4.1 Internal Validity

The validity of our results depends upon the comparability of populations across treatment and control groups. Because the villages were randomly selected, treatment should be orthogonal to household and child characteristics that might be correlated with the outcomes of interest. Insofar as this holds, it will be sufficient to compare outcomes across groups to evaluate the effect of the intervention. To assess the comparability of villages, we tabulate household and child characteristics across the treatment and control for the baseline and two follow-up surveys.

Table 2 gives the tabulation for the baseline and two follow-up surveys. Columns (1), (3), and (5) gives the mean values of the indicated variable in control villages, while columns (2), (4), and (6) gives the treatment differential, as identified from a regression of the variable on a pooled treatment dummy. Columns (1)-(2) use the baseline survey, and columns (4)-(8) the two follow-up surveys. The differences across survey groups are quite small: the only apparent imbalance is in the percentage of children who are girls, with each of the three

surveys showing a slightly higher percentage of girls than boys in treatment villages (4.1, 3.8, and 2.7 ppts for the baseline and two follow-up surveys, respectively). In appendix table B.1, we provide the same tabulation, showing the balance across the two treatment groups. The differences are again quite small: the only apparent imbalance here is a smaller average household size in the Differentiated-subsidy villages (-0.798 members), though this difference is found only in the first follow-up survey.

In sum, the research design appears to have successfully randomized the sample, so that treatment status is orthogonal to village characteristics that one would be concerned might be correlated with the outcomes of interest.

3.4.2 Treatment Differential

We first assess the characteristics of the program schools,[18] and compare them to government and private schools. To do this, we make use of the school surveys conducted during the second follow-up survey, in which information was gathered on a variety of school and teacher characteristics, using both visual inspection by enumerators, as well as interviews with headmasters and individual teachers.

Table 3 shows differences according to school type. In columns (1) and (4) are given mean levels of the indicated variables for PPRS schools, with the level of observation being the child-school. In columns (2) and (5) are given the PPRS-government school differentials according to the same characteristics, with the differences estimated from a regression of the indicated variable on a dummy for program schools. Columns (3) and (6) repeat the exercise, now giving the differences between PPRS and private schools. PPRS schools are open 0.764 more days per week than government schools, indicating that they are generally open 6 days per week. Program schools are also more likely to use English as the medium of instruction

[18]Examples of program schools can be found in appendix figure B.2.

(31.3 ppts), and less likely to use Sindhi (-37.4 ppts). The quality of physical infrastructure is also higher in program than government schools, with more having an adequate number of desks (20.3 ppts), potable drinking water (34.7 ppts), electricity (12.9 ppts), and a toilet (34.0 ppts).

There is also a marked difference in the characteristics of the teachers in program schools. Using the information collected from headmasters, program schools are reported to be staffed with more teachers than government schools (0.939), with a larger number of teachers being female (1.470); and more of these teachers having either less than 5 years of teaching experience (2.505) or 5 to 10 years of teaching experience (0.409), and fewer having more than 10 years of teaching experience (-2.015). These differences are corroborated by interviews with the individual teachers, where a higher percentage are female (25.2 ppts), and have fewer years of overall teaching experience (-12.152) and teaching experience at their current school (-5.446 years). In addition, these teachers are young (-13.987 years), have less education (-0.960 years), and lower salaries (-11,735 rupees per month). Despite these differences in teacher characteristics, there is little evidence that teachers spend a different number of hours in teaching-related activities, or that allocate their time differently across tasks, save for an additional hour per week administering exams.

In table 4 we examine the characteristics of schools in which children are enrolled across treatment and control groups. In columns (1) and (3) are reported the characteristics of schools attended by children in control villages, and in columns (2) and (4) the treatment-village differential. Treatment-village children are more likely to be educated with English as the medium of instruction (29.7 ppts), and less likely using Sindhi (-31.2 ppts). The building in which classes are held have more classrooms (0.996), and are more likely to have potable water (29.8 ppts) and toilets (43.6 ppts). As reported by headmasters, there are more teachers (1.527), and more female teachers (1.716); and more teachers having less than 5 years experience (2.397) and fewer having more than 10 years of experience (-1.065).

These differences are verified by teacher interviews: teachers are more likely to be female (36.6 ppts), are younger (-9.014 years), have fewer years of education (-1.058), fewer years teaching experience (-7.401), fewer years teaching at their current school (-2.334), and earn a lower salary (-7,451 rupees). There is some evidence that treatment-village teachers allocate their class-time differently: teachers spend more time per week teaching children in small groups (2.097 hours) and dictating notes or writing notes on the board (2.367 hours).

The change in composition of the teaching staff – with children in treatment villages attending schools with teachers who are more likely to female, are younger, have fewer years of teaching experience, and are lower paid – is consistent with the criteria for participation in the program, with entrepreneurs required to enlist two female teachers in order to qualify. It is also consistent with research on the cost advantages enjoyed by private schools in Pakistan, with entrepreneurs able to keep down costs by hiring less-educated females and paying them a lower salary than in government schools (Andrabi *et al.*, 2007). There is no evidence that this has resulted in a reduction in the character of the education imparted, with teachers allocating their time to the different teaching tasks similarly across treatment and control villages. In addition, the quality of infrastructure is high in treatment-village schools, which is consistent with the infrastructure criteria employed during vetting.[19]

3.5 Results

3.5.1 Enrollment Outcomes

School enrollment was determined in two ways: first, the adult respondent for the household survey was asked whether the child was enrolled during the just concluded school term; and, second, the attendance of the child was verified using an attendance list compiled

[19]During the vetting, criteria were included on infrastructure items such as drinking water, electricity, and toilets. Ultimately, however, the only requirements for qualification were those described in section IIIA above.

through a headcount conducted during the school survey.[20] The self-reported enrollment was ascertained in both follow-up surveys, while the enrollment verification was conducted only in the second follow-up survey. In what follows, we will discuss the results using both enrollment measures; however, because improvements in test scores are consistent with self-reported enrollment, we view this as the correct measure.

Table 5 shows the effects of the introduction of program schools on enrollment during the two follow-up surveys, pooling together the two treatment groups. Columns (1)-(4) have as the outcome variable self-reported enrollment; column (5) the verified enrollment; and column (6) the highest grade attained. Looking at enrollment effects for younger children, shown in panel A, the pooled treatment effect was a 49 ppts increase in self-reported enrollment during the first follow-up survey. This effect drops to 30 ppts in the second follow-up survey. The reason for the decline in the latter is a 20 ppts increase in enrollment in control villages which occurred between the first and second follow-up surveys – with a control-group mean of 30% enrollment in 2010 rising to a 50% enrollment rate in 2011 – which was due to the re-opening of a number of previously non-operational government schools.[21]

In panel B, we estimate the treatment effects on enrollment of older children. Despite the fact that these children were ineligible for enrollment in program schools, we nonetheless find significant increases in enrollment, with older children in treatment villages 25.5 and 12.2 ppts more likely to be enrolled in the first and second follow-ups, respectively. Interestingly, there is no evidence that older children in treatment in villages have attained a higher grade

[20]The school surveys were conducted first, so that the attendance decision would not be influenced by the presence of enumerators. Using the attendance sheets collected during the school survey, the enumerators verified the child's attendance with the assistance of the respondent.

[21]The government around this time began to re-open non-operational schools, but apparently refrained from doing so in treatment villages. This decision was not due to the intercession of SEF administrators, who were unaware until much later of this discrepancy; but was likely due to the presence of the PPRS schools and their popularity with local communities, coupled with the resource constraints of the provincial government. This finding would indicate some level of support for the program within the Pakistani government, despite the challenge these schools represent to important vested interests.

level; the reason for this is a combination of the smaller treatment effect on enrollment, as well as the fact that the older children affected by the treatment are enrolling in the lower grade levels offered in the program schools.[22]

3.5.2 Test Scores

We next estimate the effect of the treatment on test scores. At the time of the second follow-up, two exams were administered to every child in our sample between the ages 5-10. The first component was a math exam, which consisted of 24 basic numeracy questions. The second component was an *urdu* or *sindhi* exam (depending on the language spoken in the village), which consisted of 14 basic literacy questions. The scores were then normalized by subtracting off the mean for control villages and dividing by the standard deviation.

Table 6 presents the results from a regression of test scores on treatment status. Children in treatment villages show an approximately 0.62 standard deviations improvement in test scores relative to those in control villages; with the inclusion of a full vector of child, household, and district controls, the coefficient increases to 0.67. These effects are similar across the numeracy and literacy exams. In column (5), we estimate a 2sls model, with enrollment regressed on the treatment dummy in the first stage, and test scores then regressed on fitted-enrollment; the coefficients given, therefore, are for the second-stage predicted enrollment variable. Children enrolled due to the intervention score 2 stds higher on the exams than the mean of control villages. These results indicate that the schools have been highly effective in imparting to children a knowledge of basic math and literacy.

3.5.3 Treatment and Gender Disaggregations

Table 7 shows the differential effects of the two treatments on a variety of education outcomes. In columns (1) and (2) the outcomes are self-reported enrollment during the two

[22]Because attendance was not taken for these older children, verified enrollment is not included as an outcome variable in panel B of table 5.

follow-up surveys, in column (3) verified enrollment during the second follow-up, in column (4) the highest grade attained, and in column (5) the child test score. The explanatory variables are a dummy for the pooled treatments, and a dummy for the Gender-Differentiated subsidy treatment. There is no evidence that the latter has a differential effect on any of the educational outcomes.

Table 8 estimates the differential effect of the treatment according to gender on the same enrollment outcomes. There is some evidence that the enrollment effect of the pooled treatment was larger for girls than boys in the first follow-up, with girls seeing a 5.2 ppts larger increase in enrollment relative to boys, effectively wiping out the pre-existing gender differential. There is no gender differential in the treatment effect on self-reported follow-up-2 enrollment, verified enrollment, or highest grade.

As the Gender-Differentiated subsidy was introduced in order to remedy the educational gender gap found in the Sindh province, we next turn to assessing the impact it had on female enrollment. Table 9 gives the disaggregated treatment effects and their interaction with gender. There is no evidence for a differential across the two treatments; the difference between coefficients is always small, as are the F-stats.

In sum, our results indicate that the introduction of PPRS schools has had a large impact on child enrollment in these villages. The effects are the same across the two treatments, and there are no differentials according to the child's gender. There is no evidence for a differential effect across the two treatments, indicating that the Gender-Differentiated subsidy had no greater effect on female enrollment than the Gender-Uniform subsidy.

3.5.4 Aspirations

We next turn to an analysis of the effect of the treatment on the professional and educational aspirations of the children. Given the significant improvement in educational outcomes detailed above, it stands to reason that the careers and educational accomplishments deemed

desirable and viable will have also changed. The data used here is from two sources: In the household survey, there was a module in which the respondent was asked their preferences for each individual child in terms of ideal marriage age, ideal level of education, and ideal livelihood. In addition, in the child surveys, each child was asked their preferred future job and level of education.

Table 10 gives the results. In column (1) is given the mean for control villages, and in column (2) the treatment-control differential as estimated from a regression of the indicated variable on the pooled-treatment dummy. Columns (3)-(5) give the coefficients from a regression of the indicated variable on dummies for girls, pooled treatment, and the interaction of the two. In column (2), we see that respondents in treatment villages are more likely to desire that their children become doctors (4.7 ppts) and engineers (2.4 ppts), and less likely to desire they become farmers (-4.4 ppts) and housewives (-4.8 pts). The ideal level of education increases by 1.532 years.

According to the professed ambitions of the child, the only change is an increase in the probability that they want to work for government (4.1 ppts), which comes from a 12.2 ppts increase for boys. It is interesting to note that, while children in treatment villages do not desire a higher level of education than those in control villages, children in both control and treatment villages desire a significantly higher level of education than is desired by the parental respondent (11.031 years versus 7.279 years in control villages).

Looking at the gender disaggregations, we see that both boys and girls see a similar increase in the professed aspiration that they become doctors and engineers. Girls in treatment villages are less likely than those in control villages to have housewife reported as their desired profession (-14.8), and more likely to have teacher given instead (6.7 ppts).[23] Girls

[23]The only changes in aspiration expressed by the children themselves is that boys in treatment villages are more likely to report a desire to become government workers (12.2 ppts), which shift in aspirations is not shared by girls.

in control villages are desired to receive slightly less education than boys (-0.835), while boys and girls both see a significant increase in the ideal level of education in treatment villages (1.456 and 1.705 years, respectively).

3.6 Conclusion

The intervention studied here, wherein primary education is provided to marginalized communities through public-private partnerships, with the government paying private entrepreneurs a per-child subsidy to operate primary schools, has proven remarkably effective in increasing self-reported enrollment rates amongst primary-aged children. The presence of a PPRS school is associated with an approximately 30 percentage points increase in enrollment. We find no statistically significant differential impact of the intervention on girls' enrollment.

The program schools seem to be of high quality, as evidenced by both test scores and direction observation of school characteristics. Children in treatment villages score 0.67 stds higher than those in control villages on math and language exams, while children induced to enroll because of the treatment score 2 stds higher. In addition, information on school characteristics gathered by enumerators through direct observation and headmaster and teacher interviews shows program schools to be of similar and sometimes higher quality than government schools.

Table 3.1: Sample Size

	Control	Treatment			Sample
		Total	Uniform	Diff	Total
	(1)	(2)	(3)	(4)	(5)
Number of Villages	38	161	82	79	199
Baseline Survey					
Households	434	1599	795	804	2033
Children	1141	4415	2261	2154	5556
First Follow-Up Survey					
Households	1530	7109	3795	3314	8639
Children	4567	20590	11231	9359	25157
Second Follow-Up Survey					
Households	1069	4897	2594	2303	5966
Children	3093	14628	7718	6910	17721

Note: This table contains the tabulation of the sample used for the study, divided by survey round and research group.

Table 3.2: Internal Validity

	Baseline		First Follow-Up		Second Follow-Up	
	Control Average (1)	Treatment - Control (2)	Control Average (3)	Treatment - Control (4)	Control average (5)	Treatment - Control (6)
Panel A: Child Characteristics						
Age	6.859	-0.023	8.389	0.112	9.266	0.094
		(0.071)		(0.134)		(0.116)
Girls	0.379	0.041*	0.396	0.038***	0.411	0.027**
		(0.024)		(0.012)		(0.013)
Enrolled at Baseline	0.261	0.008	0.290	-0.012	0.297	-0.025
		(0.046)		(0.079)		(0.081)
Head of Household's Child					0.862	0.025
						(0.026)
Panel B: Household Characteristics						
Size of Household	9.858	-0.833	9.708	-0.511	7.437	-0.072
		(0.563)		(0.439)		(0.263)
Number of Children	3.018	-0.257	4.035	-0.204	4.932	-0.141
		(0.166)		(0.152)		(0.158)
Years of Education for Head of Household	2.571	0.252	1.895	0.488	2.456	0.191
		(0.398)		(0.305)		(0.344)
Head of Household is a Farmer	0.613	0.030	0.533	-0.068	0.616	-0.067
		(0.062)		(0.050)		(0.059)
Land Holdings			4.808	0.393	5.022	0.250
				(1.175)		(1.235)
Building Structure						
Brick			0.052	0.002	0.048	0.013
				(0.022)		(0.023)
Semi-Brick			0.197	-0.020	0.166	-0.012
				(0.063)		(0.046)
Non-Brick			0.476	0.125*	0.522	0.095
				(0.076)		(0.063)
Thatched Huts			0.274	-0.107	0.264	-0.096
				(0.077)		(0.064)
Number of Goats					4.401	-0.250
						(0.950)
Sunni					0.900	0.006
						(0.047)
Language						
Urdu					0.116	0.039
						(0.044)
Sindhi					0.662	0.062
						(0.066)
Panel C: Bias Estimate						
Estimate		0.070		0.021		0.006
p-value		0.481		0.228		0.554

Note: This table contains average demographic characteristics of children and households from the baseline and two follow-up surveys. Columns (1), (3), and (5) give the mean for control villages; and columns (2), (4), and (6) the treatment-control differential as determined by a regression of the indicated variable on the treatment dummy. Statistical significance at the one-, five-, and ten-percent levels is indicated by ***, **, and * respectively.

Table 3.3: School Characteristics by Type of School

	PPRS Average (1)	PPRS - Public (2)	PPRS - Private (3)		PPRS Average (4)	PPRS - Public (5)	PPRS - Private (6)
School Surveyed	0.956	0.634***	0.705***	**Panel C: Teacher Characteristics**			
		(0.046)	(0.085)	Days Absent in Last Month	0.838	-0.143	0.250
Panel A: School Characteristics						(0.314)	(0.266)
Number of Days Open	5.116	0.764**	0.234	Female	0.493	0.252***	-0.039
Per Week		(0.319)	(0.540)			(0.075)	(0.175)
Open Admission	0.880	-0.021	0.018	Age	25.153	-13.987***	-0.385
		(0.048)	(0.100)			(1.420)	(1.438)
Uniform Required	0.027	0.027	-0.309*	Years of Education	10.965	-0.960***	-0.950***
		(0.017)	(0.181)			(0.187)	(0.276)
Medium of Instruction				Monthly Salary	4.069	-11.735***	0.388
Urdu	0.041	0.024	-0.034	(1000s of Pakistani Rupees)		(1.136)	(0.532)
		(0.023)	(0.077)	Years of Experience	2.782	-12.152***	-0.568
Sindhi	0.609	-0.374***	0.018			(1.472)	(0.730)
		(0.050)	(0.179)	Years at Current School	1.772	-5.446***	-0.876
English	0.313	0.313***	-0.020			(1.034)	(0.682)
		(0.045)	(0.177)	Break Down of Weekly Teaching Time			
Staffing				Total Hours	25.985	0.181	-0.753
Number of Teachers	3.776	0.939***	-2.486			(1.752)	(1.138)
		(0.318)	-2.486	Teaching Full Class	6.495	0.019	-2.732
Number of Female Teachers	1.979	1.470***	-3.460***			(0.815)	(4.100)
		(0.203)	(1.529)	Teaching Students in Small Groups	6.211	1.144	-0.720
Number of Teachers with Post-	1.899	-0.461	-1.674**			(0.798)	(2.409)
Secondary Degree		(0.461)	(0.820)	Teaching Individual Children	5.984	0.194	-1.177
Number of Teacher (5 Years	3.128	2.505***	0.652			(0.881)	(2.224)
Experience		(0.176)	(0.714)	Dictating Notes to Class	6.212	1.333	-0.551
Number of Teachers Between	0.601	0.409***	-2.815			(0.913)	(2.992)
5 and 10 Years Experience		(0.123)	(2.212)	Time Spent on Discipline	3.623	-0.329	-0.532
Number of Teachers (10 Years	0.047	-2.015***	-0.323			(0.728)	(1.044)
Experience		(0.301)	(0.366)	Administering Tests	4.031	1.213*	1.673***
						(0.619)	(0.614)
Panel B: Building Characteristics				Administrative Responsibilities	3.22	0.527	0.107
School is in a Building	0.965	0.010	-0.035*			(0.540)	(1.527)
		(0.033)	(0.020)				
Number of Class Rooms	3.227	0.462	0.112				
		(0.349)	(0.925)				
Schools Has Enough Desks	0.802	0.203**	0.163				
		(0.098)	(0.175)				
School Has Potable Water	0.886	0.347***	-0.114***				
		(0.104)	(0.031)				
School Has Electricity	0.768	0.129*	-0.024				
		(0.068)	(0.141)				
School Has Toilet	0.846	0.340***	0.192				
		(0.114)	(0.167)				

Note: This table gives the characteristics of program schools, and the program-public and program-private differentials. In columns (1) and (4) are given the mean levels for program schools. The differentials in columns (2)-(3) and (5)-(6) come from a regression of the indicated variable on treatment dummies, estimated individually for private and government schools. The unit of observation is the young child-school level. Statistical significance at the one-, five-, and ten-percent levels is indicated by ***, **, and * respectively.

Table 3.4: School Characteristics by Treatment Status

	Control Average (1)	Treatment - Control (2)		Control Average (4)	Treatment - Control (5)
School Surveyed	0.952	0.044	**Panel C: Teacher Characteristics**		
		(0.029)	Days Absent in Last Month	1.906	-1.009
Panel A: School Characteristics					(0.850)
Number of Days Open	5.398	-0.231	Female	0.100	0.366***
Per Week		(0.350)			(0.085)
Open Admission	0.958	-0.072	Age	34.43	-9.014***
		(0045)			(2.104)
Uniform Required	0	0.021	Years of Education	12.028	-1.058***
		(0.014)			(0.255)
Medium of Instruction			Monthly Salary	11.686	-7.451***
Urdu	0.069	-0.022	(1000s of Pakistani Rupees)		(1.917)
		(0.052)	Years of Experience	10.297	-7.401***
Sindhi	0.931	-0.312***			(2.293)
		(0.066)	Years at Current School	4.129	-2.334**
English	0	0.297***			(0.924)
		(0.043)	Break Down of Weekly Teaching Time		
Staffing			Total Hours	24.104	0.967
Number of Teachers	2.278	1.527***			(4.744)
		(0.301)	Teaching Full Class	6.821	-0.432
Number of Female Teachers	0.246	1.716***			(1.354)
		(0.240)	Teaching Students in Small Groups	4.134	2.097*
Number of Teachers with Post-	1.533	-0.378			(1.067)
Secondary Degree		(0.338)	Teaching Individual Children	5.224	0.857
Number of Teacher (5 Years	0.766	2.397***			(1.242)
Experience		(0.269)	Dictating Notes to Class	3.811	2.367**
Number of Teachers Between	0.388	0.194			(1.159)
5 and 10 Years Experience		(0.178)	Time Spent on Discipline	3.242	0.508
Number of Teachers (10 Years	1.124	-1.065***			(0.721)
Experience		(0.268)	Administering Tests	2.695	1.303
					(0.915)
Panel B: Building Characteristics			Administrative Responsibilities	2.637	0.580
School is in a Building	0.919	0.047			(0.652)
		(0.033)			
Number of Class Rooms	2.192	0.996***			
		(0.279)			
Schools Has Enough Desks	0.616	0.186			
		(0.139)			
School Has Potable Water	0.578	0.298*			
		(0.153)			
School Has Electricity	0.628	0.134			
		(0.139)			
School Has Toilet	0.401	0.436***			
		(0.148)			

Note: This table gives the effect of treatment on the characteristics of the schools in which children are enrolled. Columns (1) and (3) give the control-village mean; columns (2) and (4) give the treatment-control differential, as estimated from a regression of the indicated variable on a treatment dummy. All standard errors are clustered at the village level. Statistical significance at the one-, five-, and ten-percent levels is indicated by ***, **, and * respectively.

Table 3.5: Enrollment

	Self-Report Enrollment				Verified Enrollment	Highest Grade
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Officially Eligible Children						
First Follow-Up	0.498***	0.499***	0.483***	0.487***		
	(0.055)	(0.055)	(0.058)	(0.055)		
Second Follow-Up	0.306***	0.306***	0.304***	0.295***	0.296***	0.359***
	(0.060)	(0.060)	(0.059)	(0.060)	(0.041)	(0.116)
Panel B: Older Children						
First Follow-Up	0.259***	0.262***	0.247***	0.255***		
	(0.063)	(0.065)	(0.068)	(0.062)		
Second Follow-Up	0.137**	0.140**	0.137***	0.122**		-0.023
	(0.057)	(0.057)	(0.051)	(0.053)		(0.312)
Child Controls	no	yes	yes	yes	yes	yes
HH Controls	no	no	yes	yes	yes	yes
District FEs	no	no	no	yes	yes	yes

Note: This table gives the treatment effects on self-reported enrollment during the first and second follow-ups, verified enrollment during the second follow-up, and the highest grade attained at the time of the second follow-up. The controls are as indicated. All standard errors are clustered at the village level. Statistical significance at the one-, five-, and ten-percent levels is indicated by ***, **, and * respectively.

Table 3.6: Test Scores

	(1)	(2)	(3)	(4)	(5)
Math Test	0.600***	0.599***	0.602***	0.656***	1.986***
	(0.143)	(0.145)	(0.142)	(0.131)	(0.271)
Language Test	0.596***	0.595***	0.594***	0.636***	1.913***
	(0.147)	(0.148)	(0.144)	(0.130)	(0.223)
Total Score	0.619***	0.617***	0.618***	0.668***	2.011***
	(0.148)	(0.150)	(0.146)	(0.134)	(0.253)
Model	ITT	ITT	ITT	ITT	TOT
Child Controls	no	yes	yes	yes	yes
HH Controls	no	no	yes	yes	yes
District FEs	no	no	no	yes	yes

Note: This table contains estimates of the effect of the program schools on test scores. In columns (1)-(4), the coefficients give the effect of the treatment on the indicated test score. In column (5), the coefficient is for enrollment, instrumented by the treatment status. Test scores are demeaned by the control-village mean, and divided by the standard deviation. The control variables are as given. All standard errors are clustered at the village level. Statistical significance at the one-, five-, and ten-percent levels is indicated by ***, **, and * respectively.

Table 3.7: Disaggregation by Stipend Type

	Self-Reported Enrollment		Verified Enrollment	Highest Grade	Total Score
	Follow-Up 1	Follow-Up 2			
	(1)	(2)	(3)	(4)	(5)
Treatment	0.485***	0.318***	0.270***	0.422***	0.668***
	(0.057)	(0.063)	(0.042)	(0.107)	(0.138)
Gender-Diff Treat	0.003	-0.006	0.049	0.012	-0.000
	(0.027)	(0.022)	(0.034)	(0.057)	(0.064)
N	19294	11572	10217	11444	10320
R-Squared	0.241	0.111	0.100	0.213	0.203

Note: This table contains estimates of the differential between the two treatment effects. The outcomes are self-reported enrollment at the time of the first and second follow-ups, and verified enrollment, highest grade attained, and total test score at the time of the second follow-up. All standard errors are clustered at the village level. Statistical significance at the one-, five-, and ten-percent levels is indicated by ***, **, and * respectively.

Table 3.8: Disaggregation by Gender

	Self-Reported Enrollment		Verified	Highest	Total
	Follow-Up 1	Follow-Up 2	Enrollment	Grade	Score
	(1)	(2)	(3)	(4)	(5)
Treatment	0.465***	0.314***	0.289***	0.438***	0.630***
	(0.058)	(0.065)	(0.039)	(0.111)	(0.144)
Treatment * Female	0.052*	0.003	0.016	-0.018	0.090
	(0.027)	(0.030)	(0.020)	(0.059)	(0.061)
N	19272	11521	10177	11393	10279
R-squared	0.239	0.111	0.098	0.213	0.203

Note: This table contains the estimates of the effect of the program schools by gender. The outcomes are self-reported enrollment at the time of the first and second follow-ups, and verified enrollment, highest grade attained, and total test score at the time of the second follow-up. All standard errors are clustered at the village level. Statistical significance at the one-, five-, and ten-percent levels is indicated by ***, **, and * respectively.

Table 3.9: Disaggregation by Gender and Treatment Type

	Self-Reported Enrollment		Verified Enrollment	Highest Grade	Total Score
	Follow-Up 1	Follow-Up 2			
	(1)	(2)	(3)	(4)	(5)
Uniform Subsidy	0.464***	0.318***	0.263***	0.454***	0.623***
	(0.059)	(0.065)	(0.043)	(0.116)	(0.147)
Uniform * Female	0.050*	-0.001	0.019	-0.068	0.106*
	(0.030)	(0.031)	(0.025)	(0.065)	(0.064)
Differentiated Subsidy	0.465***	0.309***	0.317***	0.420***	0.638***
	(0.061)	(0.067)	(0.043)	(0.114)	(0.147)
Differentiated * Female	0.054*	0.008	0.012	0.036	0.073
	(0.028)	(0.032)	(0.025)	(0.061)	(0.064)
N	19272	11521	10177	11393	10279
R-squared	0.239	0.111	0.101	0.213	0.203
H0: Uniform = Differentiated	0.000	0.156	2.049	0.282	0.055
	0.986	0.693	0.154	0.596	0.815
H0: Uniform + Uniform * Female =	0.020	0.000	1.555	1.321	0.064
Differentiated + Differentiated * Female	0.886	0.984	0.214	0.252	0.800
H0: Uniform * Female =	0.036	0.259	0.052	4.524	0.662
Differentiated * Female	0.850	0.611	0.820	0.035	0.417

Note: This table contains estimates of the two treatment effects by gender. The outcomes are self-reported enrollment at the time of the first and second follow-ups, and verified enrollment, highest grade attained, and total test score at the time of the second follow-up. All standard errors are clustered at the village level. Statistical significance at the one-, five-, and ten-percent levels is indicated by ***, **, and * respectively.

Table 3.10: Child Aspirations

	Control	Treat - Control	Female	Treatment	Female * Treatment
	(1)	(2)	(3)	(4)	(5)
Panel A: Parental Aspirations					
Ideal Marriage Age	18.496	0.256	-1.018**	0.331	-0.154
		(0.439)	(0.413)	(0.456)	(0.448)
Ideal Education	7.279	1.532**	-0.835**	1.456**	0.249
		(0.605)	(0.395)	(0.681)	(0.458)
Ideal Job					
Civil servant	0.119	0.031	-0.059	0.050	-0.027
		(0.036)	(0.047)	(0.048)	(0.049)
Doctor	0.094	0.047**	-0.006	0.057***	-0.023
		(0.018)	(0.022)	(0.020)	(0.025)
Employed in Private enterprise	0.023	-0.005	-0.019**	-0.009	0.012
		(0.012)	(0.009)	(0.015)	(0.011)
Engineer	0.015	0.024***	-0.014**	0.026***	0.004
		(0.007)	(0.007)	(0.009)	(0.011)
Farmer	0.105	-0.044*	-0.144***	-0.060	0.055
		(0.025)	(0.031)	(0.038)	(0.035)
Housewife	0.187	-0.048**	0.409***	-0.002	-0.146***
		(0.023)	(0.043)	(0.010)	(0.049)
Imam	0.000	0.005	-0.000	0.008	-0.007
		(0.003)	(0.000)	(0.006)	(0.006)
Laborer	0.025	-0.010	-0.022**	-0.004	-0.001
		(0.008)	(0.010)	(0.010)	(0.011)
Lawyer	0.004	0.009***	-0.007**	0.009*	0.002
		(0.003)	(0.003)	(0.005)	(0.005)
Merchant/trader	0.002	-0.000	0.001	0.000	-0.002
		(0.001)	(0.002)	(0.001)	(0.002)
Police/army/security	0.084	-0.031	-0.100***	-0.050*	0.041*
		(0.020)	(0.022)	(0.026)	(0.023)
Raise livestock	0.022	-0.009	0.002	-0.007	-0.008
		(0.011)	(0.012)	(0.010)	(0.012)
Teacher	0.242	0.027	0.026	-0.012	0.079**
		(0.028)	(0.029)	(0.025)	(0.035)
Panel B: Child Aspirations					
Ideal Education	11.031	-0.165	-0.381	-0.267	0.500
		(0.393)	(0.440)	(0.589)	(0.514)
Ideal Job					
Army	0.102	-0.031	-0.085	-0.068	0.054
		(0.044)	(0.060)	(0.098)	(0.066)
Doctor	0.216	0.031	-0.027	0.094	0.066
		(0.055)	(0.093)	(0.074)	(0.108)
Engineer	0.011	-0.015	-0.101	-0.091	0.097
		(0.027)	(0.096)	(0.096)	(0.096)
Farmer	0.023	-0.019	0.011	-0.032	-0.011
		(0.013)	(0.054)	(0.033)	(0.054)
Government	0.034	0.041**	0.000	0.122***	-0.112***
		(0.021)	(0.000)	(0.034)	(0.036)
Private	0.170	-0.005	-0.007	-0.063	0.083
		(0.068)	(0.131)	(0.099)	(0.146)
Teacher	0.386	-0.001	0.301**	0.036	-0.241
		(0.085)	(0.149)	(0.128)	(0.165)

Note: This table contains the estimates of the effect of the treatment on the aspirations for children within the household. Columns (1) gives the mean level in control villages, and column (2) the treatment-control differential. Columns (4)-(6) give the gender differentials across control and treatment villages. All standard errors are clustered at the village level. Statistical significance at the one-, five-, and ten-percent levels is indicated by ***, **, and * respectively.

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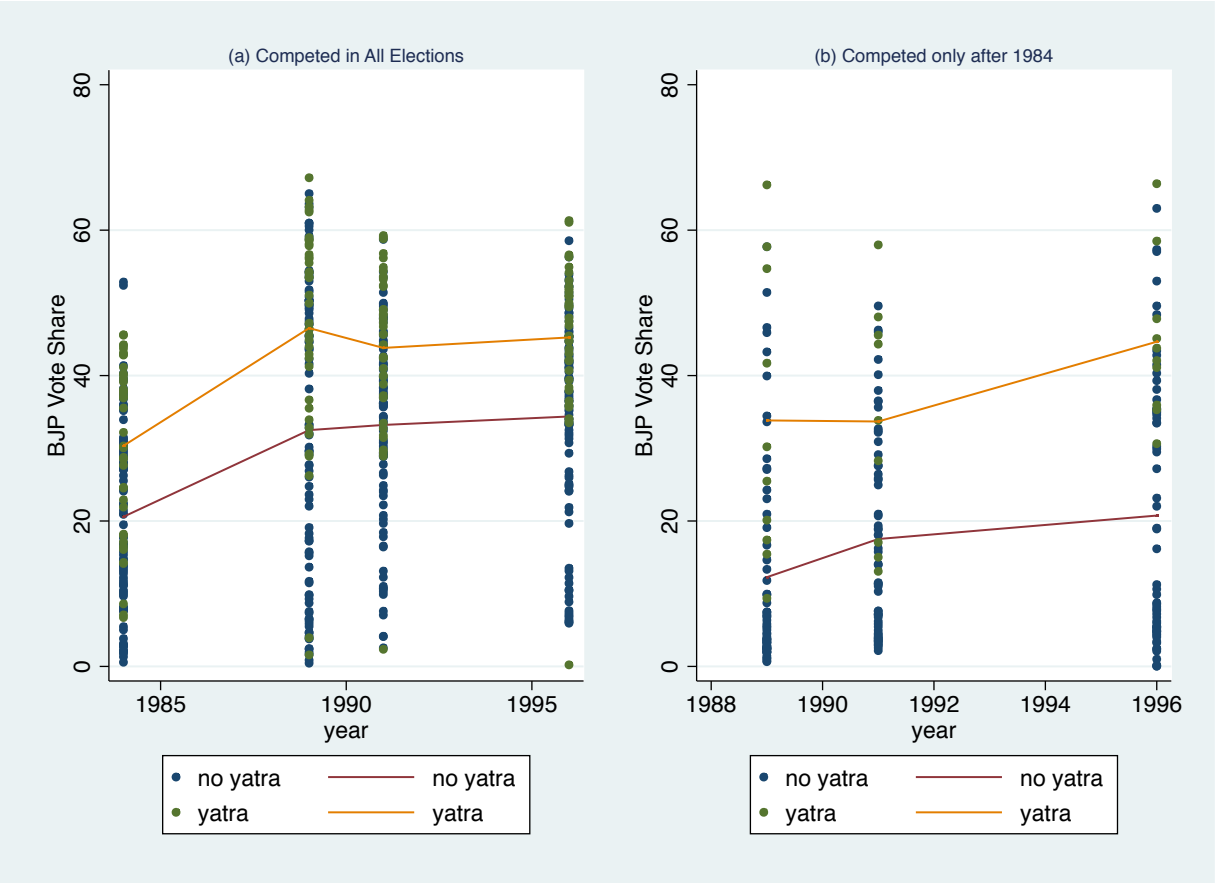
Appendix A

Propaganda and Ethno-Religious Politics in Developing Countries: Evidence from India

Figure A.1: *Yatra* and BJP Vote Share Trend



Notes: This graph shows the BJP's vote share over time, disaggregated by the *yatra* status. Panel (a) includes constituencies in which the BJP competed in all election between 1984 and 1996; panel (b) includes constituencies the BJP did not contest in 1984.

Table A.1: *Yatra* and Local Public Goods

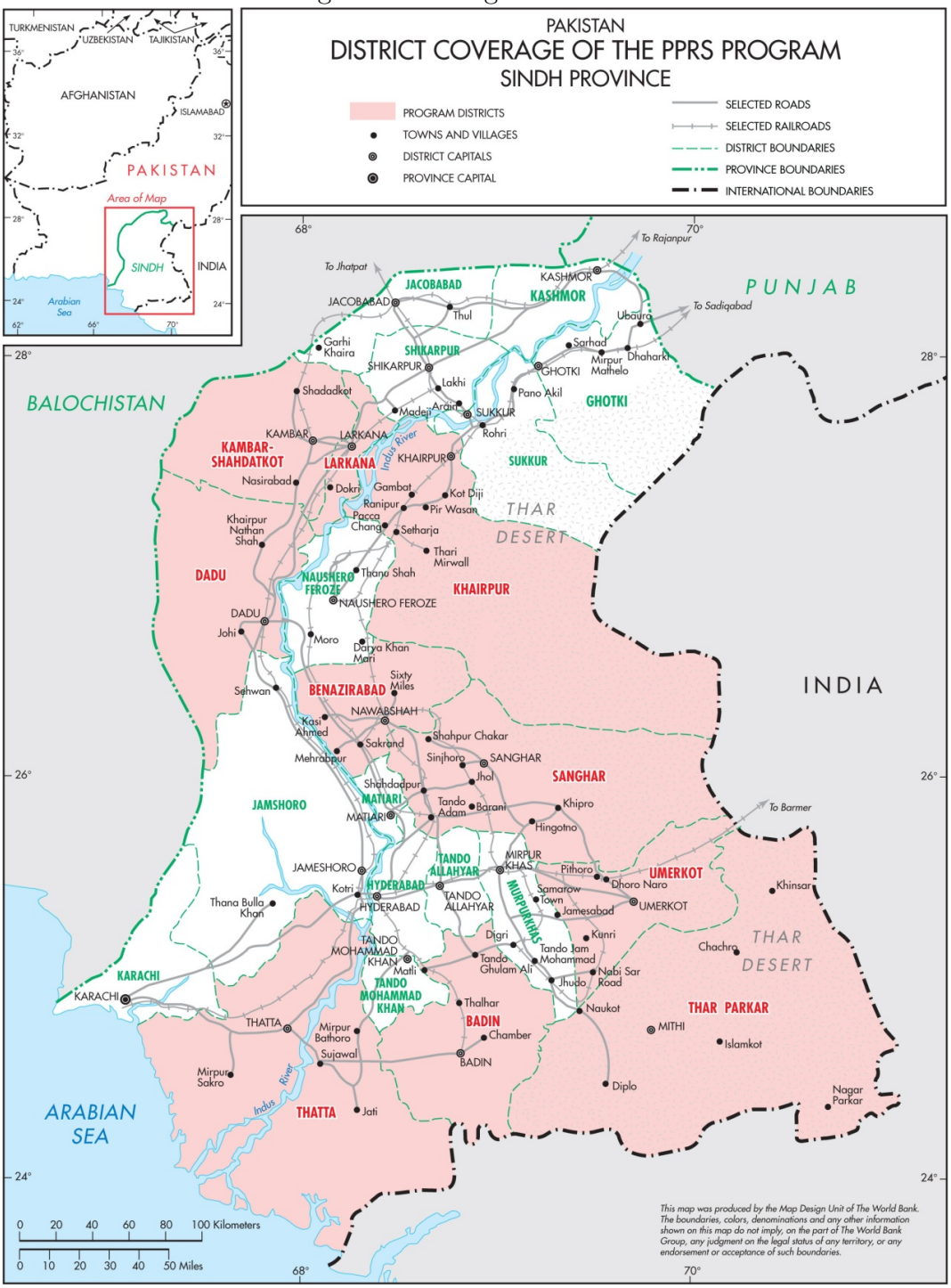
	yatra coefficients								
	w/o *mainroad*		with *mainroad*			w/o *mainroad*		with *mainroad*	
outcome:	PC	sub-district	PC	sub-district	outcome:	PC	sub-district	PC	sub-district
	(1)	(2)	(3)	(4)		(5)	(6)	(7)	(8)
drinking water					health facilities				
any	-0.007*	0.009***	-0.007*	0.009***	health center	0.002	-0.001	0.002	-0.002
	(0.004)	(0.003)	(0.004)	(0.003)		(0.003)	(0.002)	(0.003)	(0.003)
tap	0.017	0.038**	0.017	0.036*	primary health center	-0.001	0.008**	-0.000	0.005
	(0.024)	(0.018)	(0.024)	(0.019)		(0.004)	(0.003)	(0.004)	(0.003)
well	0.030	-0.006	0.030	-0.009	health sub-center	-0.030**	0.040***	-0.029**	0.036***
	(0.028)	(0.035)	(0.028)	(0.036)		(0.013)	(0.011)	(0.013)	(0.011)
hand pump	0.033	0.049**	0.033	0.053**	maternity-child	-0.000	0.001	0.000	-0.002
	(0.020)	(0.024)	(0.020)	(0.024)		(0.004)	(0.003)	(0.004)	(0.004)
tube well	0.047	0.032	0.049	0.021	hospital	0.005	-0.006**	0.006	-0.010**
	(0.030)	(0.028)	(0.030)	(0.029)		(0.005)	(0.003)	(0.005)	(0.004)
river water	-0.004	-0.002	-0.005	0.003	dispensary	-0.010	0.000	-0.009	-0.004
	(0.014)	(0.016)	(0.014)	(0.016)		(0.006)	(0.006)	(0.006)	(0.006)
electrification					irrigation				
any	-0.019*	0.032**	-0.018	0.026	any	0.001	0.032***	0.001	0.027**
	(0.011)	(0.016)	(0.011)	(0.017)		(0.012)	(0.011)	(0.012)	(0.012)
domestic	-0.021	0.054***	-0.020	0.044**	tank	0.001	-0.002	0.002	-0.005
	(0.014)	(0.019)	(0.014)	(0.019)		(0.004)	(0.005)	(0.004)	(0.005)
agricultural	0.004	0.046**	0.005	0.036*	private canal	-0.002**	-0.002*	-0.002**	-0.002*
	(0.016)	(0.018)	(0.015)	(0.018)		(0.001)	(0.001)	(0.001)	(0.001)
industrial	-0.021	0.065***	-0.019	0.049***	government canal	0.009	0.015	0.009	0.018
	(0.026)	(0.018)	(0.026)	(0.018)		(0.011)	(0.014)	(0.011)	(0.014)
comm and transport					well (electrified)	0.005	0.006	0.005	0.004
post office	-0.035**	0.011	-0.034**	0.006		(0.009)	(0.008)	(0.009)	(0.008)
	(0.017)	(0.011)	(0.017)	(0.012)	well (non-elec)	0.007	0.003	0.007	0.003
telegraph	-0.000	0.004	-0.000	0.003		(0.007)	(0.006)	(0.007)	(0.007)
	(0.004)	(0.004)	(0.004)	(0.004)	tubewell (electrified)	-0.006	0.020	-0.005	0.017
telephone	0.005	0.096***	0.009	0.067**		(0.016)	(0.020)	(0.016)	(0.020)
	(0.030)	(0.028)	(0.030)	(0.029)	tubewell (non-elec)	-0.007	-0.005	-0.006	-0.010*
paved roads	-0.016	0.036**	-0.015	0.025*		(0.006)	(0.005)	(0.006)	(0.006)
	(0.017)	(0.014)	(0.017)	(0.014)	uncultivated	0.004	0.004	0.004	0.004
education						(0.007)	(0.007)	(0.007)	(0.008)
any	-0.007	0.015***	-0.007	0.017***					
	(0.006)	(0.005)	(0.006)	(0.006)					
primary	-0.007	0.012**	-0.007	0.013**					
	(0.006)	(0.005)	(0.006)	(0.006)					
middle	-0.003	0.019	-0.003	0.014					
	(0.014)	(0.012)	(0.014)	(0.012)					
high	-0.004	0.011	-0.004	0.008					
	(0.011)	(0.008)	(0.011)	(0.008)					
adult literacy	0.006	-0.001	0.005	0.002					
	(0.024)	(0.015)	(0.024)	(0.015)					

Notes: This table gives the result of a regression of the level of the indicated public good in 2001 on dummies for a sub-district being visited by the *yatra*, and for the constituency being visited by the *yatra*. Regressions are at the sub-district level. Columns (1)-(2) and (5)-(6) give the two coefficients from a regression in which a dummy is not included for a the sub-district being on a main road; columns (3)-(4) and (7)-(8) for a regression in which the main road dummy is included. Controls are included for the level of the indicated public good in 1991. A cubic is included in the BJP's 1989 vote share and a dummy for the party's victory in 1989. State fixed effects are included, and errors are clustered at the constituency level.

Appendix B

Expanding Educational Opportunities in Remote Parts of the World: Evidence from an RCT of a Public-Private Partnership in Pakistan

Figure B.1: Program Districts



Notes: This maps shows the districts of Sindh province in which program schools were opened.

Figure B.2: Program Schools

Round-1 school, Dadu district

Round-1 school, Dadu district

Round-1 school, Khairpur district

Round-1 school, Khairpur district

Round-1 school, Thatta district

Round-1 school, Thatta district

Notes: These pictures show typical program schools across three districts.

Table B.1: Internal Validity

	Baseline		First Follow-Up		Second Follow-Up	
	Uniform Average	Uniform - Differentiated	Uniform Average	Uniform - Differentiated	Uniform Average	Uniform - Differentiated
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Child Characteristics						
Age	6.857	-0.042	8.521	-0.046	9.443	-0.175
		(0.062)		(0.116)		(0.113)
Girls	0.413	0.014	0.428	0.011	0.435	0.008
		(0.018)		(0.010)		(0.011)
Enrolled at Baseline	0.275	-0.013	0.289	-0.025	0.285	-0.027
		(0.042)		(0.059)		(0.058)
Head of Household's Child					0.878	0.019
						(0.021)
Panel B: Household Characteristics						
Size of Household	9.202	-0.364	9.561	-0.798**	7.382	-0.036
		(0.438)		(0.374)		(0.211)
Number of Children	2.76	0.001	3.929	-0.216	4.821	-0.064
		(0.133)		(0.135)		(0.132)
Years of Education for Head of Household	2.906	-0.169	2.384	-0.001	2.625	0.047
		(0.342)		(0.286)		(0.297)
Head of Household is a Farmer	0.648	-0.010	0.467	-0.005	0.566	-0.037
		(0.047)		(0.049)		(0.044)
Land Holdings			6.165	-2.068	6.156	-1.871
				(1.474)		(1.486)
Building Structure						
Brick			0.049	0.011	0.057	0.008
				(0.023)		(0.028)
Semi-Brick			0.186	-0.018	0.163	-0.018
				(0.050)		(0.039)
Non-Brick			0.600	0.002	0.621	-0.010
				(0.062)		(0.053)
Thatched Huts			0.165	0.005	0.158	0.020
				(0.065)		(0.048)
Number of Goats					4.143	0.019
						(0.837)
Sunni					0.907	-0.003
						(0.040)
Language						
Urdu					0.146	0.018
						(0.046)
Sindhi					0.711	0.028
						(0.056)
Panel C: Bias Estimate						
Estimate		0.003		0.002		-0.010
p-value		0.777		0.826		0.195

Note: This table contains average demographic characteristics of children and households from the baseline and two follow-up surveys. Columns (1), (3), and (5) give the mean for Uniform subsidy villages; and columns (2), (4), and (6) the Uniform-Differentiated differential as determined by a regression of the indicated variable on the Uniform treatment dummy, limiting the sample to treatment villages. Statistical significance at the one-, five-, and ten-percent levels is indicated by ***, **, and * respectively.