

Can Bihar Break the Clientelist Trap? The Political Effects of Programmatic Development Policy

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Abstract

It is widely recognized that politics affects policy-making, but there is little knowledge about how politics can be made more conducive to effective governance. This study reverses the relationship to ask whether temporary experiences of effective ‘programmatic’ governance can change the political attitudes and behaviour of citizens, providing the foundations for its own continuation. Primary evidence is drawn from the case of Bihar, India, where a history of clientelist practices has been challenged by Chief Minister Nitish Kumar’s programmatic reforms since 2005. To compare political attitudes, a household survey of Biharis was conducted within 4km of the state border and responses were compared to neighbours on the Jharkhand side who were not exposed to Bihar’s decade of reforms but were until 2000 members of the same state. The geographic discontinuity methodology indicates that Biharis were better able to coordinate voting on the programmatic incumbent, suggesting programmatic policy can weaken the clientelist trap and generate its own political support. However, this positive effect may be temporary because Biharis’ participation and trust in institutions is lower and they have yet to internalize a normative aversion to clientelism. This calls into question whether a programmatic political equilibrium can survive after Nitish Kumar leaves office.

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1 Introduction

Since 2005 governance practices in Bihar state have changed radically. For 15 years the regime of Lalu Yadav and his wife Rabri Devi fomented political conflict, dismantled state institutions and dispensed patronage to co-caste Yadavs (Witsoe 2012; Thakur 2006). Since his election victory, Nitish Kumar has acquired a reputation for rebuilding the civil service, improving public services, and allocating public resources based on impersonal criteria rather than caste or political loyalty (Mukherjee 2010; Thakur 2014). The economic and social effects of this governance transition have been well documented, for example in record growth rates and rising rates of immunization and school enrolment (Sinha 2011; Muralidharan and Prakash 2013). But what are the *political* effects of improved and more programmatic governance? In the short-term, is this a strategy that generates electoral rewards and, if so, how? In the longer-term, does better governance make citizens more willing to participate, more trusting of institutions and more empowered, autonomous voters? This paper investigates whether good governance is also good politics and good for democracy.

Powerful forces limit the impact of policy on the political attitudes and behaviour of voters. Indian voters have deeply held preferences for politicians with criminal backgrounds (Vaishnav 2017). The losers from reform, particularly those who can no longer rely on personal connections or their political loyalty to access public resources, are likely to mobilize voters against reformist politicians (Grindle and Thomas 1989). Policy impacts are diluted and blurred by the sprawling bureaucracy and the necessity of coalitions, such as the recent detente between Kumar's JDU and Yadav's RJD that sees them governing together. Most constricting, however, is the persistent vulnerability to clientelism that Bihar's poor voters must overcome if good governance policies are to be sustained (Chandra 2004; Bardhan and Mookherjee 2006).¹ Economically vulnerable to politicians' threats and bribes, poor voters consistently opt for clientelist politicians over a high-performing programmatic incumbent (Weitz-Shapiro 2012; Stokes et al. 2013). To overcome these pressures requires a high degree of coordinated expectations and collective action in voting. Moreover, as Imai, King and Velasco Rivera (2016) emphasize, programmatic alternatives may do little to spark political support since they offer no selective rewards to voters.

Yet despite all these challenges, Nitish Kumar and the JDU have consistently governed

¹While many definitions of clientelism have been provided and the phenomenon takes many forms, for the purposes of this paper the aspect of political relationships that I focus on is whether the distribution of public resources is made conditional on the recipient's political behaviour. This places the focus squarely on the potential political consequences of governance practices and is consistent with dominant accounts (Kitschelt 2000). Programmatic governance is the opposite, where objective and impersonal rules govern the distribution of public benefits.

the state for 12 years and over three electoral terms. They have prevailed despite intense competition from clientelist candidates that have threatened voters if they did not switch their support. Therefore, the puzzle this research seeks to resolve is: how was programmatic reform so politically successful at overcoming the clientelist trap? Why were voters willing to take the risk of backing a programmatic candidate? The longer-term trajectory of Bihar politics also depends on how deep this transformation in voter attitudes goes: the fiercest threat to good governance in Bihar is that it remains a top-down initiative, principally led by Chief Minister Nitish Kumar and his personal reputation. After Kumar leaves office, can Biharis carry the torch of good governance as more effective citizens, inoculated against clientelism, trusting of state institutions, demanding programmatic reform and eager to participate?

To investigate how Bihar's sharp change in governance affected these political outcomes the paper takes advantage of the counterfactuals provided by villages just across the border from Bihar in Jharkhand state. The administrative separation of the two states since 2000 means that for the majority of their separate histories they have been governed under quite different regimes despite very similar socioeconomic conditions. While citizens on the Bihar side of the border looked to the reformers in Patna for their political cues, citizens on the Jharkhand side looked to the unstable patronage-led governments in Ranchi. Using a geographic regression discontinuity design the political expectations, attitudes and behaviours of these citizens can be compared. To gain more precision over the content of the treatment, the analysis also takes advantage of variation in exposure to specific policies, examining how their effects differ either side of the border.

The results highlight the complex and divergent political effects of programmatic reform. On the one hand, there is evidence that programmatic policy exposure has been successful in creating collective action to overcome the clientelist trap. Biharis citizens have higher expectations of public benefits, justify their vote on more programmatic grounds, and have greater confidence other voters will sanction poorly-performing politicians. This supports the argument that programmatic reform can be effective at undercutting the clientelist trap by creating collective confidence and acting as voter coordination device. If widely-shared positive experiences of public benefits create mutual expectations of incumbent re-election, the clientelist trap can be dramatically weakened.

On the other hand, there is also evidence that programmatic policy exposure can cause voters to disengage from politics. Biharis citizens participate less, are far less trusting of institutions and are no more likely to support hypothetical programmatic candidates. As voters become liberated from clientelist networks, the pressures to participate in politics may weaken without being replaced. These sedative effects may inhibit the institutionalization of programmatic politics in Bihar. Without high levels of participation, institutional trust

and an instinctive aversion to clientelism it may be difficult for voters to coordinate against clientelism once Nitish Kumar has left office.

These findings contribute to three key literatures. In the Indian context, the emergence and success of programmatic politics at low levels of socioeconomic development has not yet received a compelling explanation. The political process that sustained - or eventually choked off - reform in other relatively poor states such as Andhra Pradesh and Madhya Pradesh remains a puzzle. [Tietelbaum and Thachil \(2010\)](#) study the retreat of clientelism, but use a very imprecise measure of social spending rather than the nature of governance itself. [Gulzar and Pasquale \(2016\)](#) demonstrate how political and institutional incentives affect policy performance but do not speak to the longer-term potential for sustained governance improvements. For Bihar, accounts by [Thakur \(2014\)](#), [Sinha \(2011\)](#) and [Chakrabati \(2013\)](#) have focused on the impact of a reformist Chief Minister such as Nitish Kumar but provide no quantitative evidence on how voters have experienced and responded to governance changes.

Beyond India, this study contributes to the understanding of the political economy of governance reform. In a literature dominated by modernization-based arguments there are few compelling theories for how governance reform can become institutionalized in extremely poor contexts. Externally-mobilized parties with the discipline to enact ideological reform do not apply to the Bihar case where the JDU is fragmented and patronage-oriented ([Shefter 1977](#)). Some studies, primarily in the African context, explain sustained governance improvements as the product of a ‘political settlement’ whose character is left ambiguous ([Booth 2013](#); [Leftwich and Laws 2012](#)). Therefore the constituencies of support for programmatic governance in poor contexts, and how these can be constructed, have never been fully specified. The evidence here goes beyond simple retrospective voting rewards ([Zucco 2010](#); [De La O 2013](#)) - which ignore the power of the clientelist trap - to demonstrate how anti-clientelist constituencies can be endogenously constructed by policy ([Larreguy, Marshall and Trucco 2015](#)). In addition, evidence of the demobilizing effects of programmatic reform reinforces evidence of this effect found in [Hite-Rubin’s 2015](#) study of the effect of access to formal finance on political participation in the Philippines.

Finally, this analysis also provides a rare contribution from the developing world to the policy feedback literature. While existing evidence for policy feedback effects on political outcomes is strong, it is sourced almost exclusively from developed economies where the threat of clientelism is weak and the institutions regulating political competition are strong ([Mettler and Soss 2004](#); [Skocpol 1992](#); [Pierson 1993](#)), The findings demonstrate that policy can be crucial to the organization - and re-organization - of politics even where clientelism remains entrenched. The mechanisms of collective action to overcome the clientelist trap, and of demobilization as clientelist ties weaken, are also novel, providing examples of the

‘cognitive’ and ‘interpretive’ feedback effects highlighted by Pierson (1993).²

In the remainder of this paper, Section 2 describes Bihar’s governance transformation. Section 3 considers the variety of ways in which programmatic policy might affect political attitudes and behaviour in the presence of clientelism. Section 4 describes the empirical methodology while Section 5 tests the assumptions of the geographic regression discontinuity. Section 6 documents the key results and Section 7 concludes.

2 Bihar’s Governance Transformation

From 1990 to 2005 Bihar was governed by Lalu Yadav and his wife Rabri Devi using an extreme brand of patronage and personalization. Lalu built a cast iron political base by mobilizing support among his namesake lower caste Yadavs and Muslims to topple upper caste control of the state apparatus. The terms of Lalu’s mobilization, however, were constructed on a platform of “state incapacity by design” (Mathew and Moore 2011), disconnecting upper castes from control of state resources, and reasserting personalized patronage relationships (Witsoe 2013). The result was not political autonomy for the lower castes but a new political dependency subject to keeping on the good side of local politicians. Hauser (1997) documents the ‘Yadavisation’ of the Bihari state as social empowerment morphed into political remuneration and disloyalty was punished through perpetual bureaucratic transfers. The RJD was “explicit about their patronage transactions” (Witsoe 2013, 186). Rules were not enforced; the staff absentee rate in primary health centres was the highest in the country at 58% (Chakrabati 2013, 9). Rather than dismantle entrenched political networks, there was a ‘democratization of brokerage’ (Witsoe 2013, 115) which descended Bihar into a ‘jungle raj’ (Mukherjee 2010, 2011; Sinha 2011).

Bihar’s point of inflexion came in the state elections of October 2005. The Janata Dal (United) (JDU), in coalition with the BJP, won a majority and the JDU’s leader Nitish Kumar became Chief Minister. Despite similar reliance on appeals to backward castes as the RJD, Kumar immediately focused on promoting ‘good governance’ reforms that would quickly transform the state (Thakur 2006; Witsoe 2013; Chakrabati 2013). Institutional reform was rapid, with leading IAS technocrats imported from across the country and bureaucracies insulated from political pressure. The proportion of budgets expended rose from 70% between 1997 and 2004 to 97% from 2006 to 2009 (Mathew and Moore 2011, 23). Duflo et al. (2015) document how e-governance reforms have reduced leakages in salary payments by 25% by bypassing intermediate tiers of government. Criminal charges were brought against corrupt and violent politicians even within the JDU; “[Kumar] could not

²As Thelen (2004) describes, if there are multiple equilibria in voting behaviour, then even small policy changes that shift expectations can radically restructure political competition.

allow his rule-of-law train to be derailed by a small rock on the track” [Sinha \(2011, 247\)](#). Efforts to enact legal rules were also intensified; between 1990 and 2004 Lalu’s regime passed an average of 15 bills in the Vidhan Sabha per year while between 2006 and 2011 Kumar passed an average of 25 bills per year (Author’s calculations from [Government of Bihar \(2013\)](#)). These included anti-clientelist bills such as the Right to Information Act 2005 and the Right to Public Services Act 2011, which made Bihar the second state in India to set fixed times and punishments for public servants to meet citizens’ demands.

The recruitment of a new police force staffed by professional former soldiers and investment in the court system brought about a radical change in the security situation.³ The pre-existing Vigilance Bureau began using its powers for legal entrapment to arrest high level officials, rising from just a handful of cases before 2006 to 289 cases by 2009. Elsewhere, the rate of road construction increased ten-fold between 2005 and 2010 ([Chakrabati 2013, 98](#)). Favouritism in contracting was reduced; contractors who were JDU politicians and did not deliver had their contracts cancelled and were blacklisted ([Chakrabati 2013, 95](#)). The Chief Minister’s Girls’ Cycle Scheme provided Rs.2,500 to girls transitioning to secondary school, but most importantly this was delivered by direct financial transfer to recipients’ bank accounts rather than through the state apparatus. External assessments of the project have confirmed that its implementation was procedural rather than politicized: 97% of eligible girls benefited, 93% received the full amount of funding, and 98% of beneficiaries purchased a bicycle ([Ghatak, Kumar and Mitra 2013](#)).

The most dramatic change in governance in Bihar was the reintroduction of meritocratic public service practices. Data on bureaucratic appointments to the Indian Administrative Service drawn from [Iyer \(2010\)](#) illustrate the marked turn-around in hiring practices since 2005. As [Figure 1](#) illustrates, from 1990-2000 postings took little regard of qualifications, but from 2005 the proportion of candidates with an undergraduate degree sharply increases.

³It was the enforcement of existing rules that turned the situation around - the Indian Arms Act of 1959 was used to punish criminals on simple charges of possession of illegal firearms ([Mukherjee 2011, 5](#)). [Chakrabati \(2013, 84\)](#) calculates an 86% drop in robbery and 83% drop in kidnapping for ransom.

Figure 1: Proportion of IAS Recruits that were Graduates in Bihar



The primary transformation in the nature of governance therefore lies in the degree to which overall public policy performance, rather than patronage and clientelism, was used to mobilize political support. Programmatic mobilization was extremely successful in Bihar, defying the predictions of existing theory. In 2010, Nitish Kumar’s JDU-BJP coalition gained an additional 63 seats and a vote swing of 3%. Political support for a strategy that sought to limit clientelism was strong even though Bihar citizens lived in considerable poverty. When Nitish Kumar became Chief Minister in 2005, at least 36 million Biharis lived below the official poverty line, 85% lived in rural areas, and 48% were illiterate. The Human Development Index in 2007 was 0.367. In 2011, the proportion of industry in net state GDP was 4.63% compared to a national average of 20.16% ([Reserve Bank of India 2015](#)).

Jharkhand did not experience any such programmatic reform. While there is very little literature on the state’s politics itself, prior evidence suggests that Jharkhand had failed to follow Bihar’s approach of policy reform and strict enforcement. The major cleavage within the state remains an ethnic one, between tribal and non-tribal peoples. A much larger volume of mineral resources in Jharkhand has also created the potential for a sub-national resource curse to take hold, or at least to blunt the incentive that Bihar faced to reform in order to access federal funds. Indeed, competition and deadlock among elites has

consistently prevented the formation of majority governments. This political deadlock has led to three separate periods of President's Rule being imposed by Delhi in the first decade of the state's existence. Even in periods of local rule, large diffuse coalitions have placed an emphasis on horse-trading rather than the reforms that have been so evident in Bihar. Mr. Singh, the former Chief Secretary of the Jharkhand civil service reported that Ministers were allowed to pick their own civil servants and selected those that were able to extract the most money from the system, in contrast to Bihar where Nitish Kumar gave technocratic senior civil servants a fixed tenure. Even where some reforms have been attempted, briefly under the JMM in 2010 for example, defection - in this case by the Deputy Chief Minister - has collapsed the government.

3 The Political Effects of Programmatic Policy

Much existing research has focused on the economic and social effects of programmatic policy (Soares, Ribas and Osório 2007; Shei et al. 2014), which are often large. Where the *political* effects of policy reform have been evaluated the focus has been on the retrospective rewards that voters give to incumbents that deliver benefits to them. For example, De La O (2013) examines how conditional cash transfers in Mexico affect the incumbent's vote share while Zucco (2013) and Hunter and Power (2008) assess Bolsa Família in Brazil. These studies have a number of limitations. By focusing on a single policy it is difficult to assess the aggregate political response to a shift in governance that affects all policies, which will depend on the number of beneficiaries, the behaviour of non-beneficiaries and how one policy interacts with the full set of public policy experiences. These studies' measures of political behaviour are also typically imperfect due to the challenges of ecological inference in aggregated voting data, a narrow focus on election-day political behaviour rather than the full set of citizenship practices, and a focus on national rather than local politics.

More substantively, the findings of these studies have also been brought into question by a recent paper by Imai, King and Velasco Rivera (2016). As well as revisiting the data in De La O (2013) to suggest that the results were dependent on a small number of outliers and the real effect of programmatic policy may be neutral, the authors also question the theory behind retrospective voting rewards: "Why would voters reward a party for actions over which the party has no control?" (? , 1). One critique is that if policy is truly programmatic so there is no discretion in policy allocation, then a voter - unless they are pivotal to the election outcome - has no reason to vote for a particular policy, since whether they receive it is out of their hands by definition. Where all parties commit to the policy, there is even less to choose between them.

This critique, however, assumes that policies are programmatically implemented and

institutionalized so that competing politicians do not threaten to redirect policy benefits to supporters for clientelist purposes. In many developing contexts, however, this is precisely the battle reformists are waging - to make programmatic policy attractive *amid* clientelist threats. In the first analysis, this only makes the programmatic reformer's task of attracting voters harder, since programmatic policy lacks the selective rewards of clientelism. It is precisely because contemporary benefits are insulated from political interference that voters discount these gains from their political decision.

However, there is a mechanism by which programmatic policy can generate positive political support in the presence of clientelism. The mobilizational effect arises not through rewarding individuals but as a coordination device generating collective action - collective *confidence* - that enables voters as a group to reward high-performing politicians. Recognizing this possibility requires a more detailed model of how clientelism affects voter choice. Drawing on the microfounded models of [Medina and Stokes \(2002\)](#) and [Lyne \(2007\)](#), the model in Appendix A, and further elaborated in [Phillips \(2017\)](#), illustrates how the individual voter's choice between supporting a clientelist and a programmatic candidate depends crucially on expectations about other voters' behaviour. Voting for a programmatic candidate offering substantial public benefits is attractive only if the risk of the clientelist competitor winning and denying the voter access to public services is small enough. That risk naturally depends on voters' collective behaviour. The implication is that there are multiple equilibria in voting behaviour in polities characterized by a divide between programmatic and clientelist candidates. Which political outcome prevails will depend on where societal expectations become anchored. The clientelist trap is simply the pressure pulling expectations towards the clientelist equilibrium.

Here, an incumbent programmatic politician has an important tool they can use to shape those expectations: programmatic policy itself. By demonstrating the programmatic credentials of the incumbent and providing a public signal of their high performance, a programmatic politician can create sufficient mutual confidence among voters to shift politics towards a programmatic voting equilibrium. Voters can now vote for the programmatic candidate confident that the clientelist alternative will not succeed and have the opportunity to punish them. Political competition between clientelist and programmatic governance models does not, then, leave programmatic policy impotent. The presence of a clientelist trap suppresses voter autonomy and impairs the political fortunes of programmatic candidates but it also creates a new role for programmatic policy - as a public signal and coordination device around which voters can pull themselves out of the clientelist trap. The empirical analysis below seeks to test whether voters have been successful in doing just that.

By incorporating a recognition of clientelism and voter interdependence into our theory of voting behaviour it is therefore possible to recover a consistent logic for why voters might

‘reward’ an incumbent programmatic politician. However, that logic has limited durability, premised on common knowledge of the abilities of the incumbent politician. The demand for good governance may not carry over to their successor, particularly if they are not given the opportunity of incumbency to demonstrate their capabilities. [Larreguy, Marshall and Trucco \(2015\)](#) makes a critical distinction, emphasizing how short-term retrospective voting rewards are not the same as a permanent inoculation against clientelism. To understand the longer-term impact that programmatic policy might have on political demand, we also need to examine how it affects more fundamental attitudes and behaviours.

A small number of studies have made the case that policy experiences can produce fundamental changes in political attitudes and demands. For example, [Sugiyama and Hunter \(2013\)](#) use survey and focus group data to demonstrate how experience with Brazil’s Bolsa Família conditional cash transfer increases confidence that the scheme is not used for clientelism, and also in the quality of governance more broadly. [Hunter \(2014\)](#) discuss how Bolsa Família is able to produce “feelings of social inclusion and agency” because it is based on objective measures of income and need rather than political loyalty. However, their argument is based on focus group discussions that lack a clear counterfactual or clear control group. It is also unclear by what mechanism autonomy is created. [Rego and Pinzani \(2014\)](#) provide qualitative evidence from the same program of how reliable resource access can expand capabilities and autonomous decision-making, particularly of female beneficiaries, and establish new state-society relationships based on rights and responsibilities rather than hierarchies of dependence. However, how this apparent autonomy translates into political behaviour is not explored. [Larreguy, Marshall and Trucco \(2015\)](#) fill this gap by demonstrating how in Mexico federally-initiated land titling reform reduced the clientelist capacity and vote share of local incumbents, indicating stronger anti-incumbency - and therefore perhaps anti-clientelist - voting behaviour. While this suggests that broader policy effects are feasible, the situation in Bihar is markedly different because governance reform was locally initiated, without the oversight of the national government. And without the ‘external’ guarantee that national policy will continue independent of the outcome of local elections, it is highly unclear if voters would have the same degree of confidence to overcome the clientelist trap and alter their political behaviour. Instead, local reformers must transform politics on their own terms by endogenously creating new political demands, and their capacity to do so remains unclear.

Instead, there are substantive arguments that programmatic policy will have a neutral or negative effect that fails to reinforce improved governance. One possibility is that voters use the opportunity of political autonomy to intensify their demands for clientelist policy. [Auyero \(2001\)](#) and [Nichter and Peress \(2016\)](#) provide compelling evidence that citizens play an active role in demanding clientelist benefits. [Ansell \(2014\)](#) describes the complexity and

mutuality of clientelist relationships, suggesting that experiences of programmatic policy can actually introduce confusion and impair social relations, creating political instability. It may therefore be that programmatic policy exposure further increases the agency and expectations of voters within a pre-existing clientelist equilibrium, enabling them to make larger particularistic demands on politicians. As programs expand, there is even a risk that the volume of public resources that are amenable to future clientelist threats grows.⁴ An alternative possibility is that voters use their political freedom to withdraw from political life as they no longer face such intense mobilizational pressures from clientelism. [Hite-Rubin \(2015\)](#) provides evidence that citizens in the Philippines respond to increased economic security in the form of formal finance access by withdrawing from politics, lowering turnout during elections. Rather than generating optimism about political efficacy, programmatic policy may simply reveal long-standing voter skepticism. The consequences for electoral outcomes are unclear, but if beneficiaries do not even turnout to vote, reformist elites will need to look elsewhere to form pro-reform coalitions.

The empirical analysis focuses on the two channels of generating short-term voting support through collective confidence and long-term impacts on autonomy, participation and the demand for programmatic governance. One channel that is not the focus of this research is the pure economic effect of these policies in raising income, which may have its own political consequences. There are a number of reasons for this. First, to keep the governance emphasis on the overall degree of rule-enforcement in policies rather than the economic efficacy of the policies themselves, which might vary greatly. Second, because measuring income changes is always challenging and was beyond the scope of the survey. Third, because a large literature on modernization effects has already provided long-run evidence that rising incomes support programmatic politics ([Weitz-Shapiro 2012](#)). In order to address an alternative theoretical pathway, the emphasis in this study is on the shorter-run effects of programmatic policy creating the means of its own continuation *before* income gains have become substantial and while poverty remains a major constraint.⁵

4 Methodology

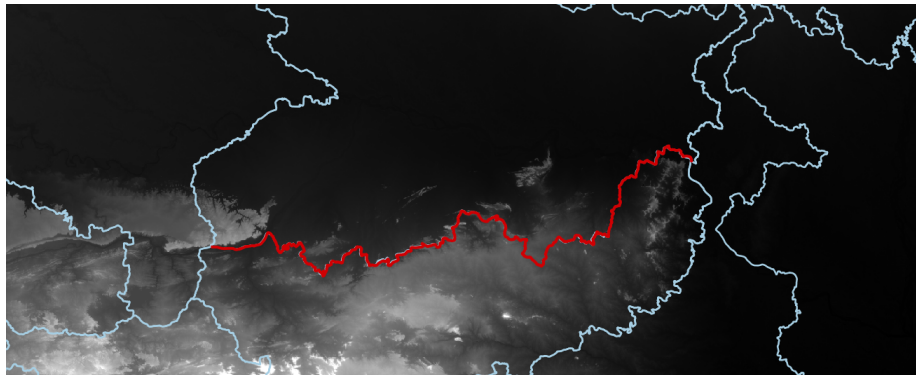
Identifying the effect of programmatic policy requires a suitable counterfactual; how would citizens respond if they had never been exposed to Nitish Kumar’s governance and

⁴A new public housing scheme, for example, may create substantial public assets which in the long-run boost citizens’ incomes but in the short-run provide clientelist candidates with valuable leverage for pressuring residents or attracting potential residents.

⁵For example, education reform that affects primary school children today will at best only alter recipients’ private sector income at least 6-10 years down the line.

mobilization style? The research design takes advantage of three features of the Bihar case that support causal inference: (i) the extent of exposure to governance changes is limited to the territorial scope of Bihar state creating a discontinuity in treatment exposure at the state’s boundaries, (ii) neighbouring territorial units are part of the same national political system, enabling us to hold electoral and other institutions constant, and (iii) the neighbouring state of Jharkhand was part of the same state administration up to the year 2000, which suggests that important covariates such as historical experience and culture may be particularly similar between the two states. The location of the Bihar-Jharkhand border follows old district border lines, which have been fixed since at least 1971 (Kumar and Somanathan 2009) and were themselves drawn largely to coincide with geographic features, rather than for political reasons. As Figure 2 shows, there is a close, if imperfect, demarcation of the border between the plain of the Ganges river (Bihar) and the Chota Nagpur plateau (Jharkhand), as indicated by the altitude of the terrain.

Figure 2: Relationship of the Bihar-Jharkhand border to Terrain Altitude



There remains a risk that political attitudes diverged in the short period between 2000 and 2005, driving both the election of Nitish Kumar and any contemporary difference in attitudes. While there are no reliable political measures from this period to contradict this possibility, the process by which Kumar became Chief Minister suggests that the outcome was a product of national elite competition more than a shift in voter attitudes. Up to 2004, voters continued to support the RJD as the largest single party by a wide margin; the RJD received 30.67% of the vote and 22 seats, 8% points and 16 seats more than its nearest rival. What forced the RJD from power was a series of events in *national* politics. First, Lalu was remanded in custody over the fodder scandal from 1997 onwards, securing a conviction in 2003. Second, just before the February 2005 state polls, a key member of Lalu’s alliance, Ramvilas Paswan of the dalit party LJSP, broke away along with 29 crucial seats. The breakaway was triggered by the two party leaders’ competition at the national

level: both were ministers in the UPA government, and Paswan (a former railway Minister) promised to “teach Laloo Prasad Yadav a lesson for scheming to take away the Railway Ministry in the UPA government”.⁶ The open trading of corruption allegations and “ego issues” created a personal enmity which split the two political camps.⁷ The decision to leave Lalu’s alliance created a hung state assembly in the February 2005 polls.

Yet, in a hung parliament the RJD remained the single largest party by a margin of 10% points and 20 seats; had the alliance held, Lalu would still have remained in office. It took a third act of national intervention to produce turnover. The Union UPA government, eager to retain the RJD for its majority in the Lokh Sabha, sought to defend its local ally by suspending the state assembly and imposing President’s Rule on Bihar.⁸ In reality, the central government’s efforts to stall Lalu’s decline served merely to hasten that very outcome. During President’s Rule, the Governor has the power to newly appoint and replace civil servants, enabling Lalu’s clientelist control to be broken. On the newly-levelled playing field new elections were held in October 2005. Nitish Kumar’s JDU beat Lalu’s RJD into third place in number of seats. Nevertheless, while the RJD lost 21 seats, it lost only 1% of the vote share between February and October 2005. This suggests that while removing the incumbent regime was a crucial stepping stone, turnover itself was not triggered by a mass shift in demand for more inclusive governance. The elite-led trajectory of turnover in 2005 suggests that a dramatic shift in political attitudes, particularly asymmetrically across the border area, was unlikely to have already taken place.

The Bihar-Jharkhand contrast therefore provides variation to support a number of methodological approaches. First, I assess differences in the key dependent variables either side of the border, holding other differences constant. This assesses to what extent differential experiences of governance between Bihar and Jharkhand have translated into different outcomes on the key dependent variables. This analysis uses a Geographic Regression Discontinuity (GRD) framework. The GRD draws a contrast between the smooth continuity with which demographic, socioeconomic and other variables change across the Bihar-Jharkhand border, and the sharp difference in exposure to distinct governance experiences since 2000. Citizens living close to the border now look in opposite directions, towards the state capitals in Patna and Ranchi respectively, to understand the policies they

⁶Quoted at <http://www.frontline.in/static/html/fl2126/stories/20041231002603700.htm>

⁷Interview with Ajoy Alok Kumar, Spokesperson JDU, 18th October 2016.

⁸Attempts to impose President’s Rule on Bihar in 1990, 1998 and 1999 all failed by small margins, for example the 1999 attempt passed in the lower house but was blocked in the Senate (Witsoe 2013, 75). That the decision reflected political calculation was later confirmed by the Supreme Court which released a post-hoc ruling in 2006 that the imposition of President’s Rule in Bihar had been unconstitutional (<https://indiankanoon.org/doc/1649520/> and <https://indiankanoon.org/doc/1885130/>.)

receive and the elections they vote in. While this approach has been successfully used to characterize long-run historical differences (Dell 2010), this study demonstrates the value of contemporary applications.

The GRD methodology therefore provides an appropriate counterfactual - individuals who live just across the border in Jharkhand state - with which to assess the effect of exposure to programmatic policies. Evidence of differences in citizens' attitudes and behaviour that change sharply at the border would therefore provide compelling evidence that divergences in governance experiences are responsible. The basic equation I estimate, in line with Dell (2010), is a third order polynomial in latitude and longitude:

$$y_i = \alpha + \beta Bihar + x + y + x^2 + y^2 + x^3 + y^3 + x^4 + y^4 + x * y + x^2 * y^2 + x^3 * y^3 + x * y^2 + x * y^3 + x^2 * y + x^3 * y + \epsilon_i \quad (1)$$

Here, individual responses are indexed by i and Bihar is a dummy variable indicating a respondent living in Bihar state. x and y represent latitude and longitude. β is the parameter to be estimated.

Second, suspending the role of the border momentarily, I assess the effect that variation in policy exposure has on the dependent variables. While the border provides a good proxy for distinct experiences of governance, this is a compound treatment of many differences. To be more precise about the effects it is helpful to focus on the effects of specific policies. This analysis uses a simple regression framework including key control variables and, in additional specifications to maximize inferential leverage, matched village fixed effects (as defined in the ex ante sampling methodology) and matched individual fixed effects (with matched pairs of individuals identified ex post).⁹ However, the expected direction of the results depend on the nature of the policy, and fundamentally whether it provides the recipient with a clear signal of the incumbent's commitment to programmatic policy or tightens the clientelist trap by providing a contingent reward. I use the girls' cycle scheme, versions of which have been implemented in both Bihar and Jharkhand as an example of the former, following Muralidharan and Prakash (2013), and MGNREGA as an example of the latter, in light of evidence on the extent to which the scheme is used as a political reward (Maiorano 2016).

For the third methodology I combine the two sources of variation - program exposure and administrative boundary - to assess how citizens react to the same policies in different governance contexts. Specifically, do citizens respond to comparable policy to a greater

⁹The analysis controls for key confounders including age, gender, an index score of assets, annual household income, land area, livestock, house type, education, caste/jati and household size.

degree in the more programmatic governance environment of Bihar than in Jharkhand? This is a test of whether the polities are essentially in different equilibria, with program exposure having a distinct impact depending on whether or not there is a programmatic incumbent. This analysis lends itself to the use of a multi-level model to assess whether the coefficients on the program exposure variables differ either side of the border.

4.1 Sample Selection

Since the data collection must be targeted to the Bihar-Jharkhand border to maximize the scope for causal inference, representativeness is inevitably a secondary consideration. Even with a perfect sampling design it would not be possible to generalize the findings to the whole of Bihar state. Rather, the emphasis must be on maximizing the integrity of the comparison across the border. Accordingly, the sampling strategy sought to ensure comparability at both the village and individual levels. Using census data, villages within 4km either side of the border were pair-matched.¹⁰ The budget accommodated the sampling of 157 matched pair villages, with 14 respondents in each village for a total target of 4,396 respondents. The village-matching procedure enforced coarsened exact matching (Iacus, King and Porro 2012) on six key census variables (population size, % scheduled caste, % scheduled tribe, % literate, the education index and the roads index). In addition, the matching algorithm sought to identify the geographically nearest village that met these criteria. A maximum distance threshold was set to ensure that all matched villages would be within 30km of each other, and that threshold was adaptive to the local population density so that more proximate matches were required in more densely populated areas. Once the matching algorithm was run covariate balance was assessed and the variables and their coarsening were iteratively refined until balance was maximized while achieving the required sample size of 157 matched pair villages.

Figure 3 below indicates the Bihar-Jharkhand border, the location of the sampled villages on either side of the border, and dotted lines connecting the matched villages. Bihar is located at the upper half of the map with villages indicated in blue.

¹⁰The 4km bound was selected based on inspection of regression discontinuity plots and based on the minimum geographic distance that supported the identification of the 157 matched pairs.

Figure 3: Map of the Sampled Villages along the Border

Pair Matched Villages



4.2 Measuring Political Attitudes and Behaviour

With respect to the short-term capacity of programmatic policy to generate collective confidence and promote support for the incumbent, a number of survey questions are used which relate to the current set of candidates. A direct question about the likelihood of public goods benefits if the incumbent were re-elected assesses whether respondents perceive large benefits from the continuation of programmatic policy. A question about the perceived level of elite corruption is a test of the credibility of programmatic reform and the ability of candidates to signal their performance. Voter coordination is measured by asking respondents for their expectations that *other* voters would vote against a poorly performing MLA. This captures the collective action dynamic of voters' mutual dependency, of whether citizens exposed to programmatic place more faith in other voters' willingness to join with them in setting a high threshold and voting against poor performers. Additional measures confirm whether voters are more willing to vote for the incumbent politician,¹¹ and whether their self-reported reasons for voting are based on overall incumbent performance or particularist links.

For the deeper impact of programmatic policy on attitudes and demands independent of the current candidates, a range of measures are used. These include expectations of loss if they upset a politician and the density of respondents' political networks.¹² Political demands are measured by the rate at which citizens make requests of politicians and other actors (Kruks-Wisner 2013; Bobonis et al. 2016). Multiple indicators of election turnout, political participation, trust and interest in politics were assessed. To measure normative attitudes towards clientelism I consider responses to a number of hypothetical vignettes that ask voters what other voters *should* do when faced with a clientelist offer.

Finally, to measure generalized willingness to vote for programmatic candidates other than the incumbent I use a conjoint survey experiment that forces respondents to prioritize preferred hypothetical candidate characteristics. A major advantage of the conjoint survey is that it is explicitly designed to prevent individuals' choices from being recoverable from the data, encouraging truthful answers and reducing social desirability bias. The design of the conjoint survey and its analysis is as follows: Each respondent was presented with two candidates that randomly varied on five attributes: gender, caste, party, past performance and future promises. Given the need to make the experiment engaging, credible and ac-

¹¹This is an important verification that programmatic policy can generate electoral support but there are many characteristics of the state-specific political context which influence support for the incumbent other than programmatic policy so is not sufficient on its own to demonstrate the political effects.

¹²This uses a simple application of the method in Calvo, Murillo and Murillo (2013) to compare the number of political contacts a respondent has to the size of their social network as calibrated by the number of people with specific names they report knowing.

cessible to low-literacy respondents, the hypothetical candidates were characterized using a series of images.¹³ The order of presentation of the attributes/images was also randomized. Respondents were then asked to select who they would prefer to vote for. The exercise was repeated twice with each respondent. An example is provided in Figure 4.

Figure 4: Example of Conjoint Candidate Profiles



The choices made by respondents can be modelled using a simple regression methodology following [Hainmueller, Hopkins and Yamamoto \(2014\)](#). Since few identical profiles appear more than a couple of times, the quantity being estimated is the average marginal component effect (AMCE) which measures the influence of each level of each attribute on the respondent's choice, averaging over all the other visual cues the respondent received at the same time. This enables us to contrast the weight placed on specific characteristics either side of the border. Of particular interest is whether voters in Bihar place greater emphasis on hypothetical candidates making programmatic promises - to provide jobs by improving the overall economy - rather than clientelist promises - promising jobs only to voters. The

¹³The preparation of thousands of these random profiles was made extremely simple by the conjoint tool in [Meyer and Rosenzweig \(2016\)](#).

trade-off with other characteristics such as caste, and how responses vary depending on the respondent’s own policy exposure are also informative.

5 Testing Assumptions of the Geographic Regression Discontinuity Design

Important assumptions of the GRD design can be tested using secondary data from national censuses and primary data collected from the household survey:

5.1 Pre-treatment similarity between Bihar and Jharkhand

In order to draw inferential leverage from the fact that Bihar and Jharkhand were the same state prior to 2000 it is necessary to show that there were no significant differences in socioeconomic variables *or* in governance at that time. The 2001 census, data for which was collected by the end of 1999 just before the state was divided, provides an opportunity to test the similarity between both regions close to the subsequent border. Figure 5 illustrates through a regression discontinuity plot in distance from the border that most variables display smooth continuity across the border. Table 1 provides formal regression discontinuity tests for a larger set of variables.¹⁴

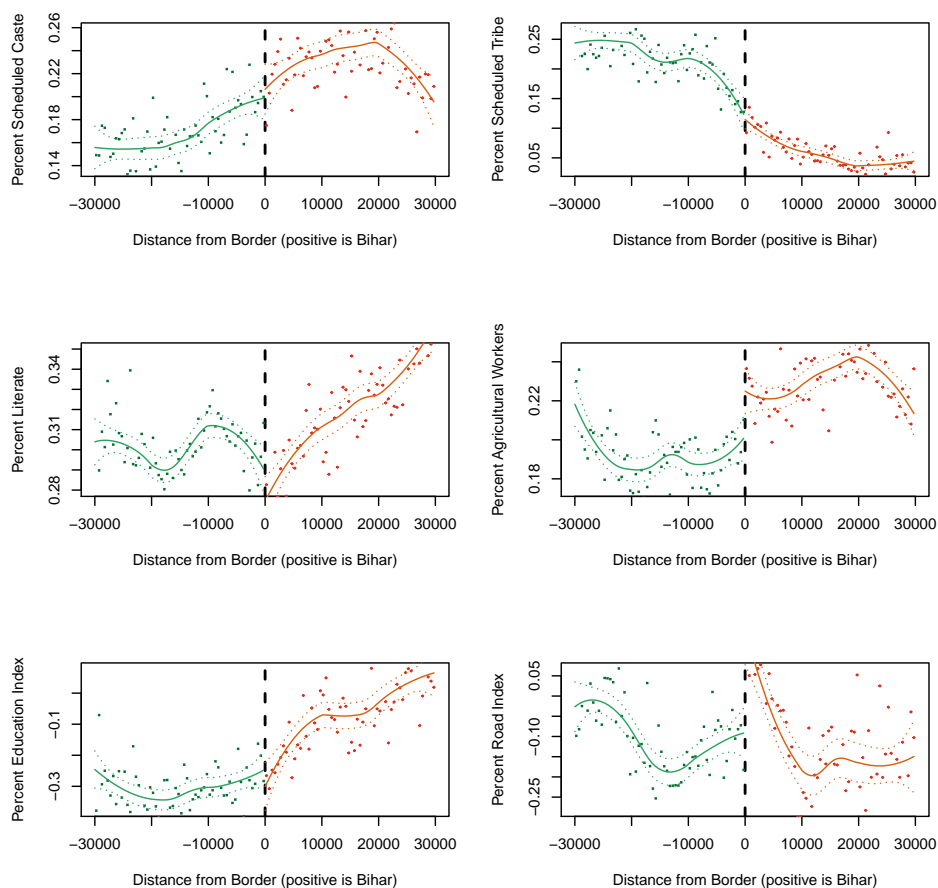
On a number of variables, some imbalance is evident, but the magnitude of the differences is small. For example, literacy is 4% points higher in Jharkhand and there is a 4% higher concentration of agricultural workers in Bihar. It does appear that Bihar’s side of the border had marginally better road and irrigation coverage. Additional tests also demonstrate that the size and significance of the imbalances along the Bihar-Jharkhand border were much less than along the Bihar-Uttar Pradesh border, which has been in place for many decades.

5.2 Continuity of potential outcomes

Beyond historical similarities, it is also important that there be continuity in contemporary sociodemographic variables across the border. This enables us to rule out alternative explanations for distinct citizen attitudes, most importantly modernization theory. Technically, we require continuity of potential outcomes (Y_0, Y_1) on the two-dimensional latitude-longitude score of household locations relative to the boundary point (Keele and Titiunik 2011, Equations 3 and 4). While potential outcomes cannot be directly measured,

¹⁴To minimize the number of variables to be tested, village amenities variables are grouped into thematic indices according to the grouping in the census and in line with the presentation in [Gulzar and Pasquale \(2016\)](#).

Figure 5: Continuity in Key Variables Across the Bihar-Jharkhand Border in 2001 Census



we can evaluate whether observable covariates (which might otherwise influence potential outcomes) are continuous across the border. To do so, I make use of the more recent 2011 census which captures a decade of separate governance either side of the border. It is worth noting that unlike the previous test against the 2001 census data we do not demand continuity in indicators of governance, since these may well have diverged since separation and will be an important component of the governance treatment. Figure 6 and Table 2 provide regression discontinuity assessments of the data. They indicate a very similar pattern to the 2001 data and provide strong evidence of continuity across the border. For example, they record exactly the same slight difference in literacy and the proportion of agricultural workers. Again, what is more important than the statistical significance of these tests is the small magnitude of the differences at the border.

One variable on which it is particularly important to show continuity is altitude, since the border is loosely based on the edge of the Chota Nagpur plateau. Large changes in

Table 1: Regression Discontinuity of Sociodemographic Variables across the Bihar-Jharkhand Border from Census 2001. Positive coefficient values indicate higher values in Bihar.

	Variable	Coefficient	p-value
1	Population	-29.52	0.64
2	Scheduled Caste %	-0.02	0.26
3	Scheduled Tribe %	-0.00	0.96
4	Literacy %	-0.04	0.00
5	Children under 6 %	0.00	0.95
6	Gender %	0.00	0.99
7	Agricultural Workers %	0.04	0.00
8	Non-Agricultural Workers %	-0.01	0.06
9	Marginal Workers %	-0.03	0.16
10	Education Index	-0.07	0.11
11	Medical Index	0.03	0.56
12	Water Index	0.10	0.17
13	Comms Index	0.00	0.95
14	Bank Index	0.09	0.18
15	Road Index	0.25	0.00
16	Urbanization Index	0.02	0.75
17	Irrigation Index	0.13	0.00

altitude at the border could also produce very different local economies and social networks, which may have political implications. To confirm this is not the case, Figure 7 illustrates a regression discontinuity plot of terrain elevation 10km either side of the border, with the survey area highlighted with dashed lines. While there is a clear increase in elevation towards Jharkhand (to the left of the figure), the increase is smooth and on average amounts to just 20-30 metres over the full width of the survey area.

Figure 6: Continuity in Key Variables Across the Bihar-Jharkhand Border in 2011 Census

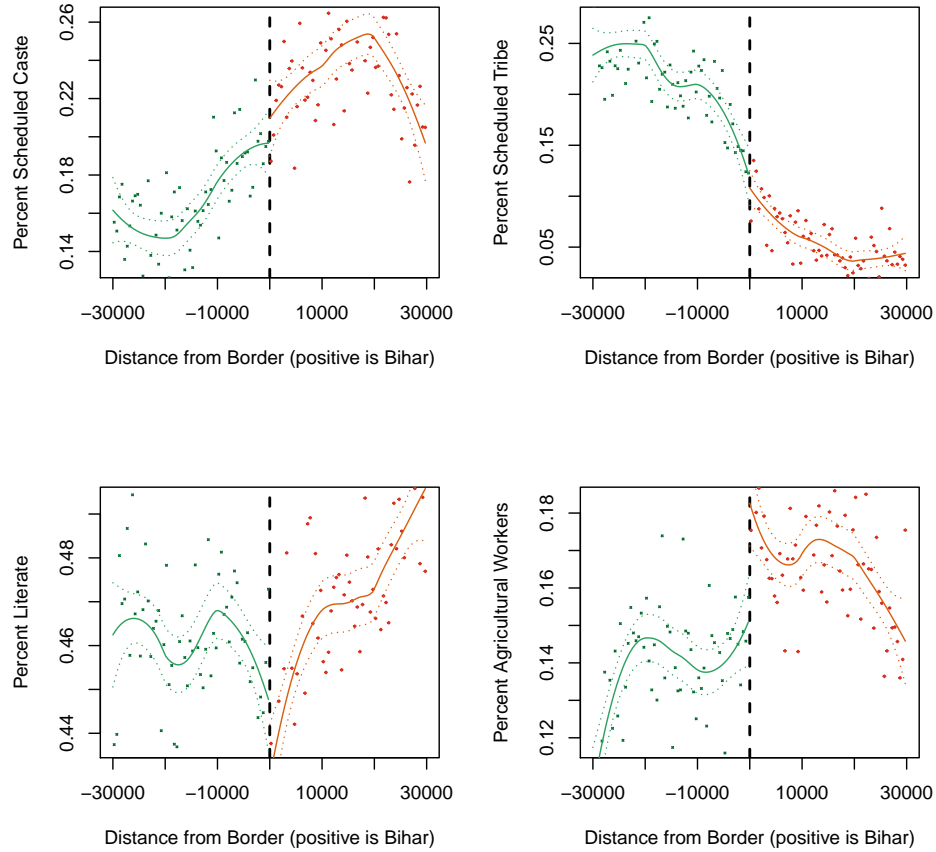
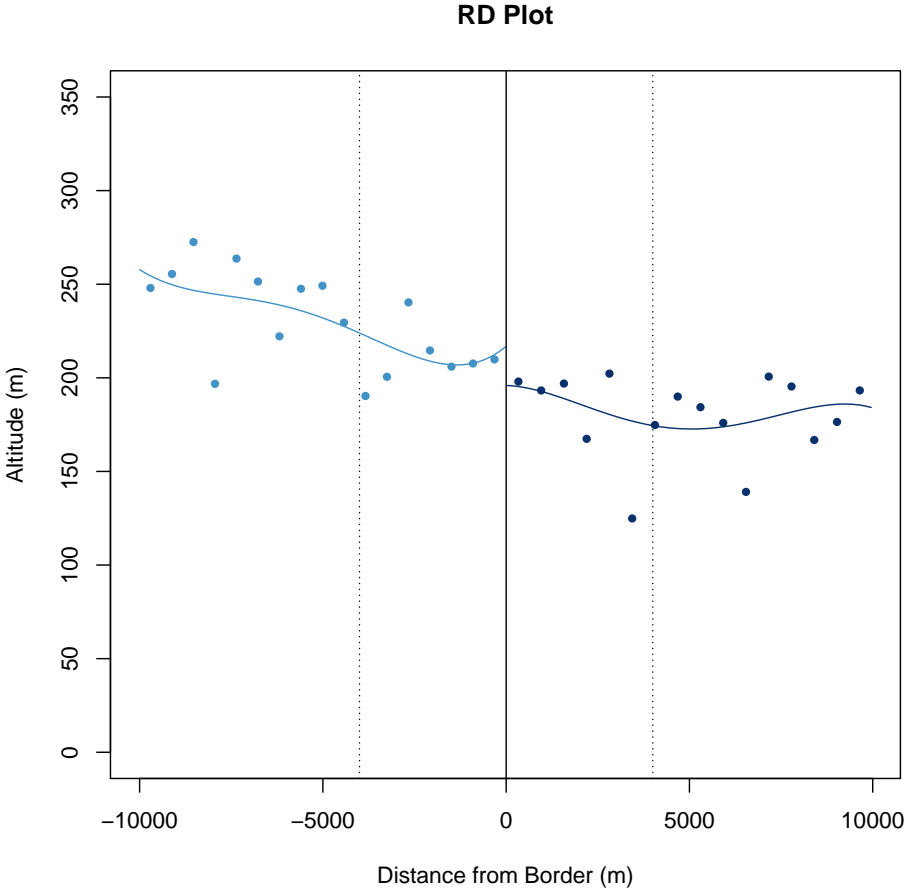


Table 2: Regression Discontinuity of Sociodemographic Variables across the Bihar-Jharkhand Border from Census 2011. Positive coefficient values indicate higher values in Bihar.

	Variable	Coefficient	p-value
1	Population	-25.43	0.71
2	Scheduled Caste %	-0.01	0.70
3	Scheduled Tribe %	-0.01	0.64
4	Literacy %	-0.04	0.00
5	Children under 6 %	-0.00	0.89
6	Gender %	-0.00	0.70
7	Agricultural Workers %	0.04	0.00
8	Non-Agricultural Workers %	-0.01	0.01
9	Marginal Workers %	-0.01	0.65

Figure 7: Continuity in Terrain Elevation Across the Bihar-Jharkhand Border



5.3 Balance in Village Matched Pairs

We can also assess continuity and balance in the sampled matched pairs. The aim of the matching procedure was to control further at a more localized level for the limited imbalance that exists at the border in order to provide the closest approximation possible to an experimental design. Using pre-treatment data from the 2001 census, Table 3 provides comparisons of means and a matched-pair t-test. The balance is extremely good on all variables except for irrigation, which is marginally better in Bihar. Table 4 makes the same comparison using the 2011 census. Here, imbalance is slightly larger on the governance variables where divergence has taken place since 2000.

Table 3: Pre-treatment Village Balance in Sample across the Bihar-Jharkhand Border, Census 2001

	Variable	Treated Mean	Control Mean	Mean of Differences	P Value
1	Population	857.02	776.83	80.19	0.32
2	% Scheduled Tribe	6.14	5.31	0.82	0.22
3	% Scheduled Caste	23.08	22.37	0.70	0.38
4	% Literate	26.88	26.82	0.06	0.93
5	% Aged Under-5	20.93	21.69	-0.77	0.11
6	% Women	48.07	48.09	-0.02	0.96
7	% Agricultural Workers	19.93	18.65	1.28	0.24
8	% Non-Agricultural Workers	3.91	3.60	0.31	0.56
9	% Marginal Workers	33.74	35.70	-1.96	0.49
10	Education Index	-0.27	-0.30	0.03	0.50
11	Medical Index	-0.14	-0.18	0.03	0.49
12	Water Index	-0.13	-0.18	0.05	0.60
13	Commercial Index	-0.19	-0.27	0.08	0.24
14	Banking Index	-0.03	-0.19	0.16	0.12
15	Road Index	0.01	-0.04	0.06	0.43
16	Urbanization Index	-0.35	-0.43	0.08	0.23
17	Irrigation Index	-0.07	-0.27	0.20	0.01

5.4 Balance in the Individual Respondents

Finally, we can also assess whether sociodemographic variables vary smoothly in the household survey data. Table 5 provides difference in means and t-test results comparing respondents either side of the border. The large sample size means that there are a number of statistical imbalances, but the magnitude of these is very limited. It is unclear that one state is consistently more developed than the other; while Jharkhand has a marginally higher asset score and income, Biharis are more likely to possess a bank account and have more livestock, an important asset.

Table 4: Village Balance in Sample across the Bihar-Jharkhand Border, Census 2011

	Variable	Treated Mean	Control Mean	Mean of Differences	P Value
1	Population	1074.05	922.32	119.70	0.21
2	% Scheduled Tribe	7.43	4.57	2.81	0.02
3	% Scheduled Caste	24.27	22.89	1.12	0.45
4	% Literate	41.94	43.95	-2.24	0.08
5	% Aged Under-5	19.57	19.39	0.21	0.77
6	% Women	47.70	48.37	-0.66	0.11
7	% Agricultural Workers	16.14	13.62	2.73	0.10
8	% Non-Agricultural Workers	2.79	3.58	-0.83	0.13
9	% Marginal Workers	45.20	47.31	-2.46	0.47
10	Education Index	-0.22	-0.18	-0.05	0.54
11	Medical Index	-0.16	-0.01	-0.16	0.19
12	Water Index	-0.23	-0.13	-0.11	0.33
13	Commercial Index	-0.31	-0.24	-0.10	0.24
14	Banking Index	-0.31	0.05	-0.40	0.00
15	Road Index	-0.35	-0.08	-0.30	0.01
16	Urbanization Index	0.12	-0.47	0.57	0.00
17	Irrigation Index	-0.01	-0.15	0.12	0.14

5.5 No Selective Sorting Across the Border

The methodology assumes that exposure to treatment on one side of the border does not lead to selective migration or sorting of individuals either side of the border. An upper-bound on how serious a threat this is can be estimated by direct questioning about how many respondents have migrated, where from, and for how long. The survey responses indicated that only 3% of the households had ever migrated. Of these migrants, a maximum of 5.1% of Bihari respondents could have migrated from the other side of the border, and 17.5% for Jharkhand respondents.

Table 5: Individual Balance in Sample across the Bihar-Jharkhand Border

Variable	Treated Mean	Control Mean	Standardized Mean of Differences	P Value
1 Age	41.42	42.31	0.06	0.09
2 Number in Household	7.58	7.00	-0.14	0.00
3 Education	5.93	6.11	0.05	0.11
4 Asset Score	3.87	4.08	0.11	0.00
5 House Materials	1.26	1.48	0.16	0.00
6 Bank Account	0.74	0.67	-0.16	0.00
7 Annual Household Income	2.05	2.28	0.13	0.00
8 Land Area	21.93	20.57	-0.04	0.25
9 Number of Livestock	2.88	2.22	-0.19	0.00

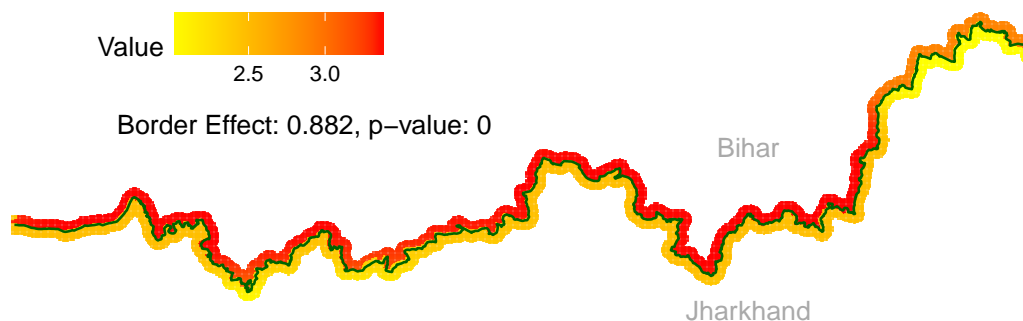
6 Results

Consider first how programmatic policy impacts short-term voting behaviours among the current set of political candidates. How do citizens just on the Bihar side of the border compare to those on the Jharkhand side? Table 6 demonstrates the coefficient estimates and p-values using both the two-dimensional (latitude-longitude polynomial) and unidimensional (distance-to-border) methodologies for key outcomes. Positive coefficient values indicate that the outcome is higher on the Bihar side of the border. The two methodologies are broadly consistent, and where the unidimensional analysis is not significant, the more precise two-dimensional analysis is significant at standard significance levels. To illustrate the difference, I also report two-dimensional predicted value plots following Dell (2010) that are the analogue of the standard one-dimensional discontinuity plot.¹⁵ Higher values are depicted in red and sharp changes in colour at the border are illustrative of a strong border effect.

The geographic discontinuity provides evidence that programmatic governance exposure can indeed generate collective confidence and a willingness to reward programmatic incumbents. First, in Bihar the incumbent is substantially more likely to expect the incumbent to deliver large quantities of public goods if re-elected, as shown in Figure 8. Respondents were also more likely to believe that elites could not conduct corruption with impunity in Bihar (Figure 9). Biharis also had much greater confidence that other voters would set a high re-election threshold and punish poor performing politicians (Figure 10). This provides evidence of the potential for collective action among voters as this confidence is

¹⁵For ordinal response survey measures, the predicted values are based on assigning numeric scores to the ordered levels. For example, from 0 - ‘Not at all Likely’ to 3 - ‘Very Likely’.

Figure 8: Predicted Value Plot of Likelihood of Incumbent Providing Public Goods if Reelected



crucial to supporting non-clientelist candidates. In turn, this appears to translate into real behavioural differences - Biharis were much more likely to report voting for the programmatic incumbent (Figure 11), and cited overall performance and collective policy issues more frequently than their counterparts in Jharkhand (Figure 12).

Table 6: Estimates of Regression Discontinuity Effects

	Lat-Long		Distance to Border	
	Coefficient	P-value	Coefficient	P-value
Likelihood of incumbent providing public goods if re-elected	0.88	0.00	1.09	0.00
Voted for incumbent	0.18	0.02	0.13	0.26
Likelihood of corrupt elites being caught	0.23	0.01	0.17	0.17
Likelihood others would sanction poorly-performing MLA	0.15	0.00	0.21	0.00
Collective Policy Reasons for Voting for MLA	0.04	0.06	0.07	0.06

Figure 9: Predicted Value Plot of Likelihood of Corrupt Elite being Caught

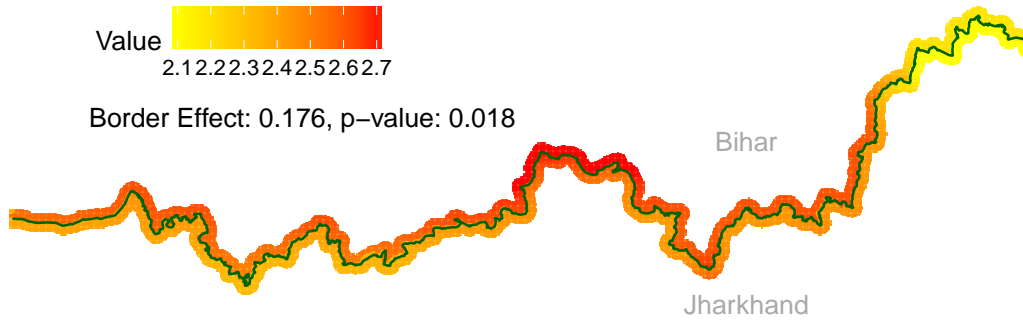


Figure 10: Predicted Value Plot of Likelihood Other Voters would Sanction Poorly Performing MLA

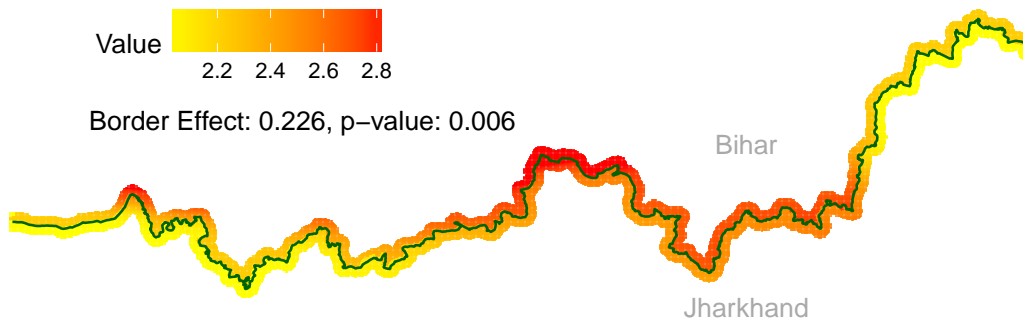


Figure 11: Predicted Value Plot of Voting for the Incumbent

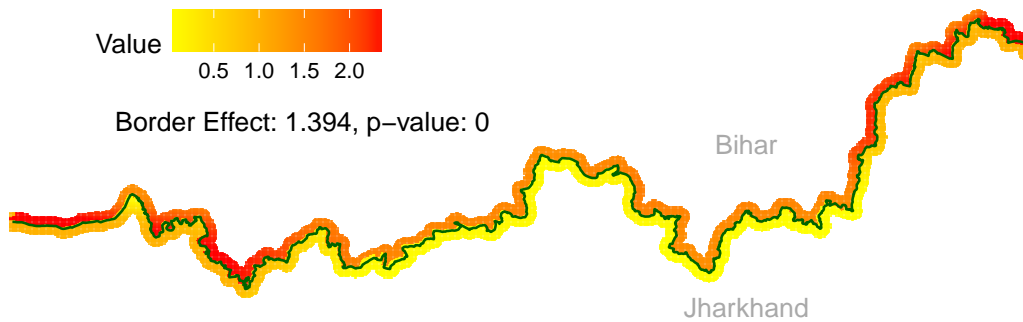
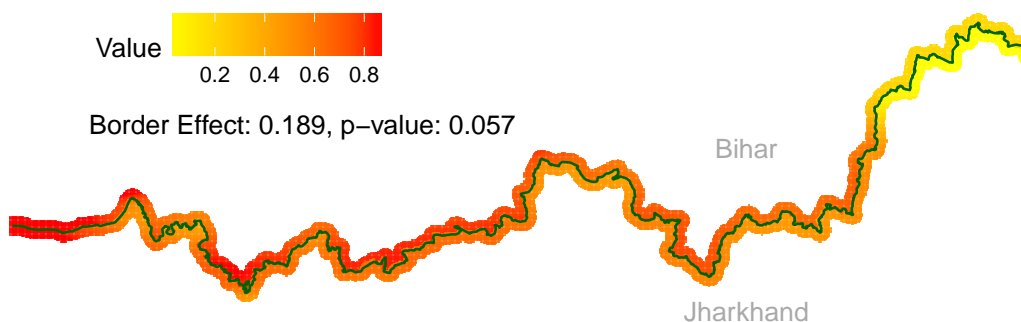


Figure 12: Predicted Value Plot of Voting for Collective Policy Reasons



How deep do these attitudes go, and are they likely to outlast the current cohort of politicians? Here the evidence is extremely mixed. Differences in state-specific governance practices do seem to have affected the political networks to which voters are connected. Biharis report having less dense networks of brokers, politicians and government contacts, and the smaller size of governmental networks is statistically significant at the 5% level (see Figure 13). This is perhaps indicative of the withdrawal of voters from clientelist networks and a degree of political insulation of the bureaucracy.

However, this independence from political networks does not translate into greater political efficacy. There are no recorded differences in citizens' belief that their vote matters, or in expectations that community repair requests will be fulfilled. Instead, Biharis are more likely to believe that politics is complicated, though the difference is not significant at 5% (Figure 14). Moreover, they are also *less* likely to reject vote-buying offers, though again the difference is not significant (Figure 15). The demand for clientelism has also shows no any decline in Bihar; there is no evidence that Bihari citizens make claims on politicians at

Figure 13: Predicted Value Plot of Estimated Government Contacts Network Size

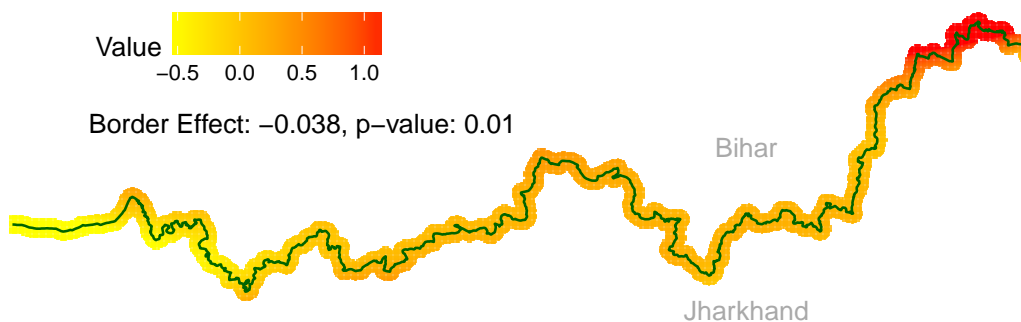


Figure 14: Predicted Value Plot of Belief that Vote Matters

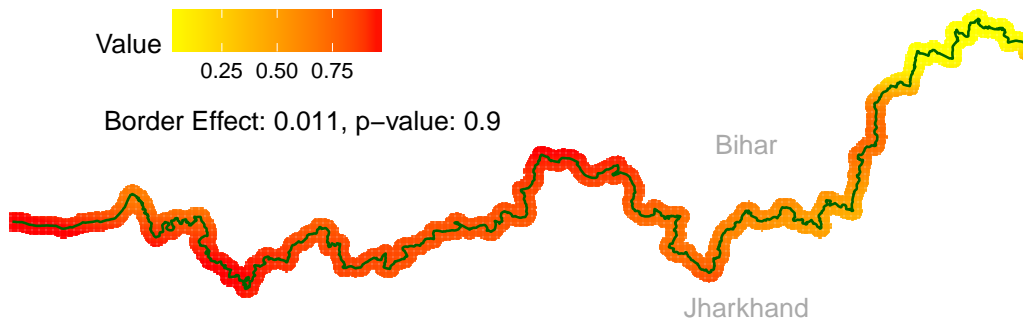
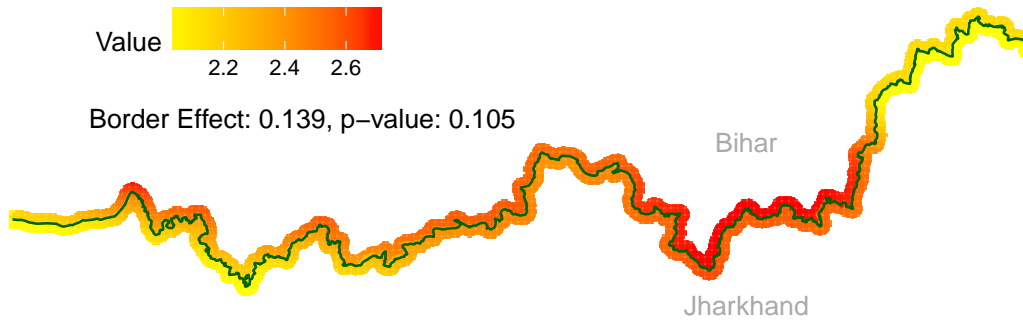
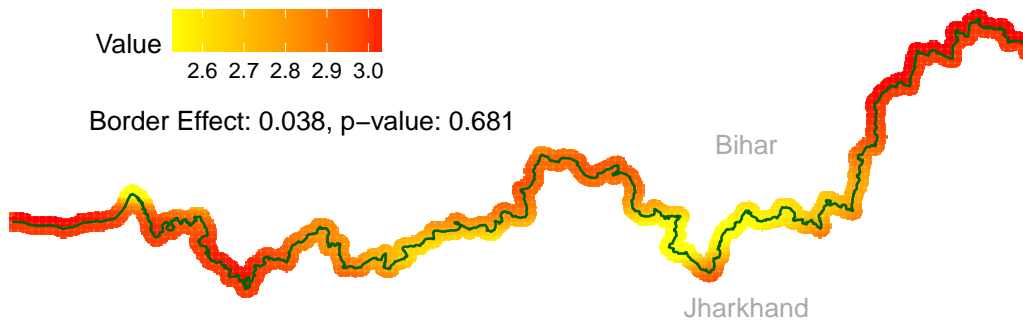


Figure 15: Predicted Value Plot of Belief Politics is Complicated



a different rate (Figure 16).

Figure 16: Predicted Value Plot of Rate of Claims made on Politicians



A number of results suggest that there may in fact be negative effects of programmatic policy that threaten democratic engagement. While electoral turnout is no different, attendance at Gram Sabha meetings is substantially lower in Bihar (Figure 17), suggesting that political participation may suffer. Moreover, there is strong evidence of much deeper skepticism of political institutions in Bihar. Trust in courts, in the national government, in teachers, in political parties and in the civil service (shown in Figure 18) is markedly lower. Remarkably, however, one positive finding is that despite their skepticism Biharis are substantially more likely to express an interest in politics (19).

Finally, how do preferences over hypothetical clientelist and programmatic candidates vary? The results of the conjoint survey experiment are illustrated in Figure 20, first providing separate estimates of each characteristic's effect either side of the border.¹⁶ Table 7 presents a model that interacts each attribute with the respondent's state in order to assess if responses varied either side of the border. The results indicates that respondents tend

¹⁶Standard errors were clustered at the level of the respondent.

Figure 17: Predicted Value Plot of Gram Sabha Attendance

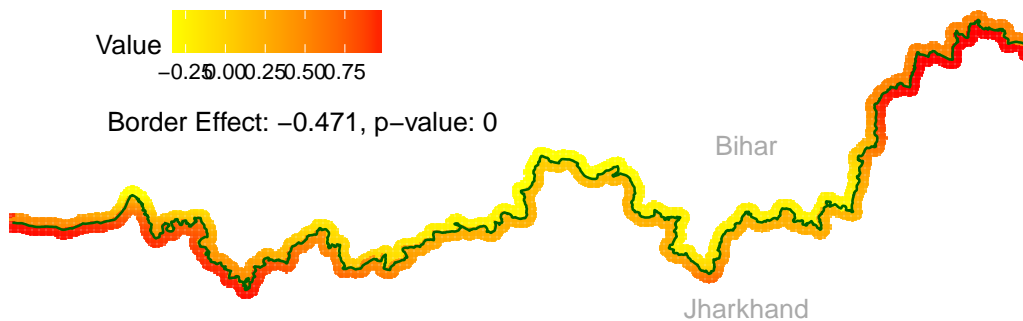


Figure 18: Predicted Value Plot for Trust in the Civil Service

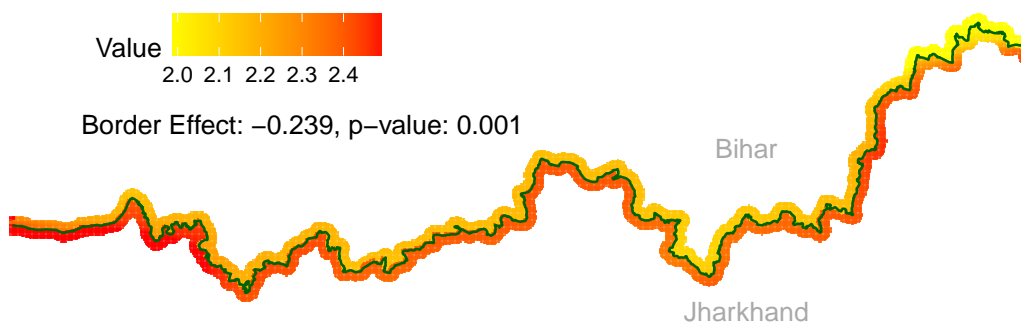
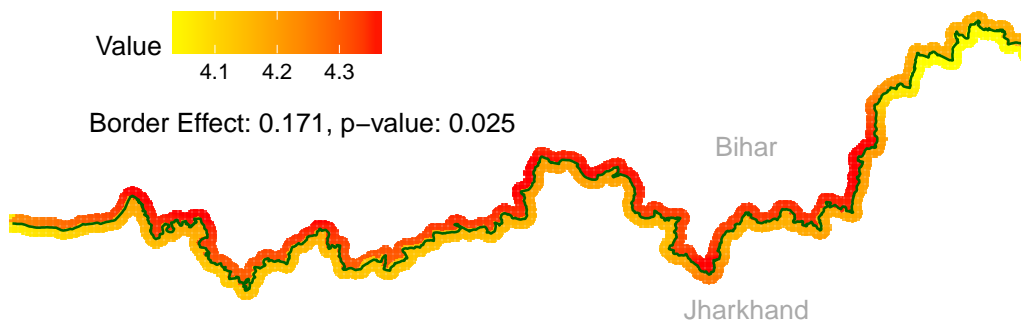


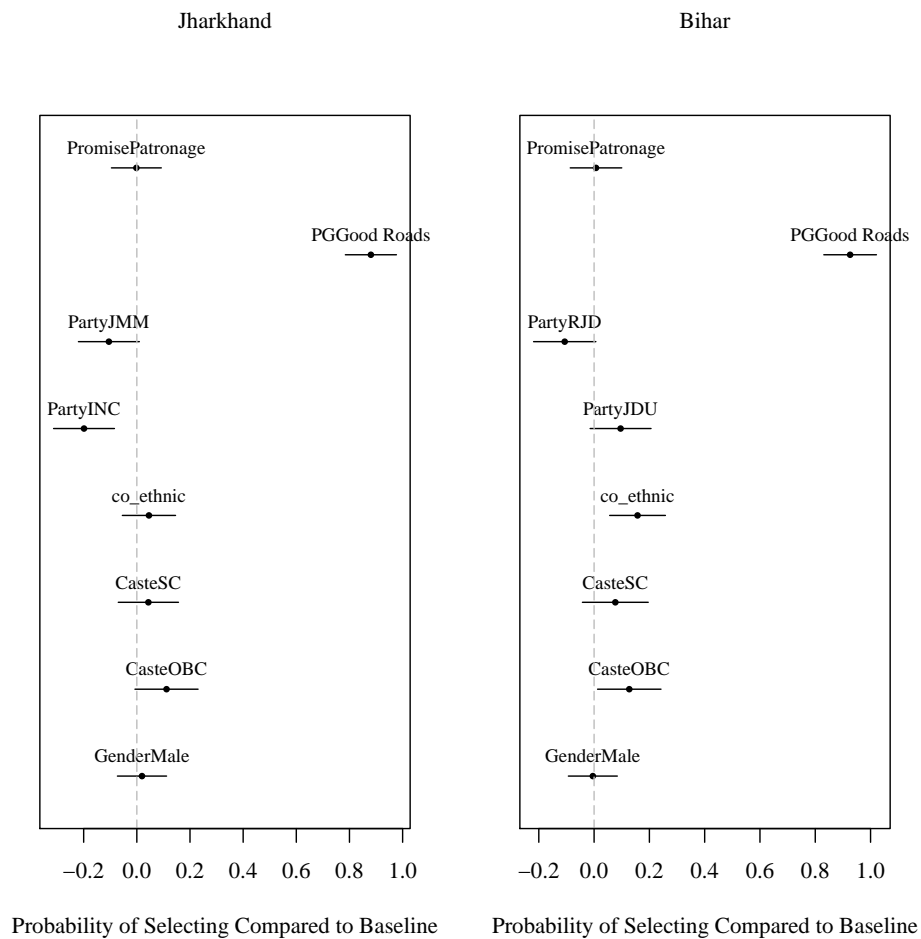
Figure 19: Predicted Value Plot of Interest in Politics



to place greatest weight on public goods delivery, and also value co-ethnics and candidates from the OBC caste. Specific parties seem to attract greater support in each state, the JDU in Bihar and the BJP in Jharkhand, which may not be surprising given that these are the leading ruling parties currently. Gender and the type of promises made do not seem to matter. Strikingly, there do not appear to be significant differences between states in the trade-offs that respondents make between these attributes, as indicated by the lack of significance on any of the interaction terms. In neither state does the patronage treatment have any effect. This suggests that Biharis have not become instinctively more averse to clientelism as a result of the last 15 years of governance reform. This is backed up by the lack of any difference in respondents' normative beliefs about how families should respond to a candidate that provides them with a truck load of bricks just before an election (Figure 21).

One reason for these findings may simply be that the hypothetical nature of the conjoint question precludes programmatic policy from having its expected effect. If the clientelist trap is undermined by securing citizens' assets from political interference and creating a

Figure 20: Conjoint Experiment Results



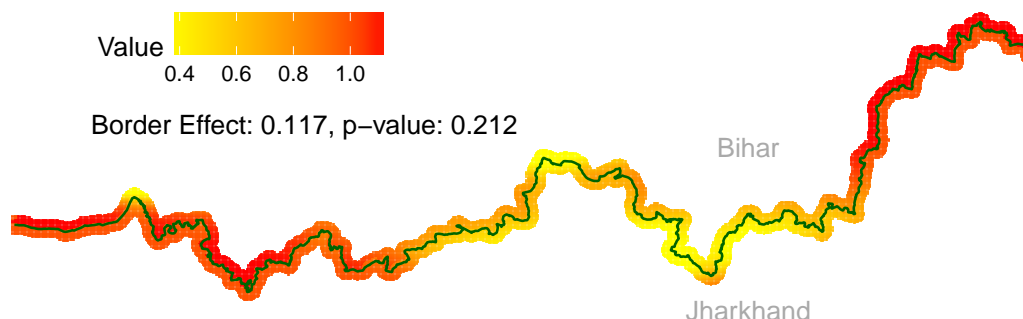
public signal of high-performing politicians, these mechanisms may simply not operate in a hypothetical game played with a single individual. For obvious ethical reasons it is not possible to put respondents' assets at risk, so recreating the force of the clientelist trap in a hypothetical survey measure may not be directly possible.

Table 7: Results of Conjoint Experiment

Gender - Male	-0.005 (0.045)
Caste - OBC	0.122* (0.059)
Caste - SC	0.086 (0.061)
Co-ethnic	0.150** (0.052)
Party - INC	-0.191*** (0.057)
Party - JDU	0.089 (0.055)
Party - JMM	-0.098 (0.057)
Party - RJD	-0.114* (0.056)
Public Goods - High	0.930*** (0.049)
Promises - Patronage	0.001 (0.048)
State - Jharkhand	0.168 (0.087)
Male * Jharkhand	0.024 (0.065)
OBC * Jharkhand	-0.005 (0.084)
SC * Jharkhand	-0.051 (0.084)
Co-ethnic * Jharkhand	-0.098 (0.073)
Public Goods * Jharkhand	-0.053 (0.069)
Patronage * Jharkhand	0.003 (0.067)
Intercept	-0.672*** (0.062)

*p < .05; **p < .01; ***p < .001

Figure 21: Regression Discontinuity Plot of Norm of Rejecting Hypothetical Bricks in Exchange for Votes



6.1 Policy Exposure Variation

Ignoring the spatial variation and focusing on how policy exposure affects political attitudes and behaviour, Table 8 illustrates how the sign of the policy effect is predominantly positive for the cycle scheme but negative for MGNREGA. Most striking is the consistently negative effects of MGNREGA in harming expectations of public benefits, accountability and collective action among voters. This is evidence of the clientelist trap in operation. Even where the cycle scheme does not have a positive effect it is notable that it does not have the negative effect of MGNREGA. This indicates that whereas exposure to clientelist policy strengthens the clientelist trap, exposure to programmatic policy has a neutral or sometimes positive effect. The potential to overcome the clientelist trap through collective action therefore depends heavily on the policies to which citizens are exposed. These findings are reinforced by the alternative estimation strategy of using matched pair fixed effects for individuals either side of the border (Table 9).

Table 8: Effect of Policy Exposure on Outcomes

	Cycle Scheme	MGNREGA
Likelihood of incumbent providing public goods if re-elected	0.205*	-0.318**
Voted for incumbent	0.027	-0.324**
Likelihood of corrupt elites being caught	0.116	-0.578***
Likelihood others would sanction poorly-performing MLA	0.032~	-0.024
Collective Policy Reasons for Voting for MLA	-0.008	0.045

To more formally test for a difference in effects by policy type, I implement a Wald test of the null hypothesis that the coefficient on the cycle scheme is the same as on MGNREGA

Table 9: Effect of Policy Exposure on Outcomes with Matched Individual Fixed Effects

	Cycle Scheme	MGNREGA
Likelihood of incumbent providing public goods if re-elected	0.656***	-0.634***
Voted for incumbent	0.205	-0.698***
Likelihood of corrupt elites being caught	0.06	-0.929***
Likelihood others would sanction poorly-performing MLA	0.011	-0.087***
Collective Policy Reasons for Voting for MLA	-0.01	0.039

for the specification with controls.¹⁷ For the five indicators the p-values are 0, 0.011, 0, 0.015 and 0.228 respectively for the five outcome variables, indicating numerous significant differences in the effects of the two programs.

To extend the policy exposure analysis to the conjoint experiment, Table 10 compares responses from those households who did and did not receive the cycle scheme and MGNREGA. Specifically, consider how non-clientelism promises for job creation from the hypothetical candidate interacts with the respondent’s policy exposure. MGNREGA has a markedly less positive effect than the cycle scheme, suggesting that recipients of programmatic policy may be somewhat more responsive to programmatic offers from politicians.

6.2 Spatial and Policy Variation

The final step of the analysis is to ask how these policy exposure effects differ either side of the border? To the extent that Bihar has a programmatic incumbent, exposure to any policy - clientelist or programmatic - is expected to produce relatively more positive attitudes to programmatic options because the programmatic equilibrium should be more accessible and voters less bound by the pressures of clientelism. Two methodologies are employed. First, using a simple interaction between policy exposure and state to contrast responses either side of the border, the results are consistent with this hypothesis but not statistically significant. Table 11 demonstrates that all but one of the coefficients are positive, indicating that policy exposure has a more favourable effect on programmatic voting behaviour in Bihar than in Jharkhand.

The second methodology is to use a multi-level model that permits the coefficients on the policy variable to be estimated separately for Bihar and Jharkhand. The equation

¹⁷This is very conservative; we could also use a one-sided test of whether the cycle scheme coefficient is greater than the other scheme coefficient.

Table 10: Results of Conjoint Experiment by Policy Exposure

Gender - Male	0.008 (0.033)
Caste - OBC	0.115** (0.042)
Caste - SC	0.061 (0.042)
Co-ethnic	0.102** (0.036)
Party - INC	-0.194*** (0.057)
Party - JDU	0.088 (0.055)
Party - JMM	-0.098 (0.057)
Party - RJD	-0.113* (0.056)
Public Goods - High	0.905*** (0.034)
Promises - Patronage	0.038 (0.039)
State - Jharkhand	0.106* (0.045)
Promises - Economy * Cycle Scheme	0.135** (0.049)
Promises - Patronage * Cycle Scheme	-0.032 (0.052)
Promises - Economy * MGNREGA	0.024 (0.053)
Promises - Patronage * MGNREGA	-0.032 (0.050)
Constant	-0.666*** (0.050)

*p < .05; **p < .01; ***p < .001

Table 11: Interaction Effect of Policy Exposure on Outcomes in Bihar versus Jharkhand

	Cycle Scheme	MGNREGA
Likelihood of incumbent providing public goods if re-elected	0.125	0.378 [~]
Voted for incumbent	0.132	0.289
Likelihood of corrupt elites being caught	0.164	-0.037
Likelihood others would sanction poorly-performing MLA	0.03	0.051
Collective Policy Reasons for Voting for MLA	0.005	0.018

estimated is as follows, with individuals indexed by i and the state indexed by s .

$$y_{i,s} = \alpha_s + \beta_s Policy_{i,s} + \epsilon_{i,s} \quad (2)$$

$$\alpha_s = \mu_\alpha + \eta_s \quad (3)$$

$$\beta_s = \mu_\beta + \zeta_s \quad (4)$$

Using the notation of (Gelman and Hill 2006),¹⁸ both a different intercept α_s and slope coefficient β_s are estimated for each state as the combination of an ‘average’ fixed effect and a state-specific random-effect. This enables us to assess how policy affects political attitudes differentially in each state, with partial pooling allowing us to make maximal use of the data.

The results, illustrated in Figure 22, indicate that policy effects are starkly different in each state. In Bihar, the cycle scheme increases expectations of public goods delivery while in Jharkhand it dims those expectations. While MGNREGA is particularly corrosive of expectations in Jharkhand, those effects are much weaker in Bihar. The same is true for expectations of elite accountability for corruption (Figure 23), for expectations of others’ willingness to sanction poorly performing politicians (Figure 24) and for pro-incumbent voting (Figure 25). Together, these findings suggest that the political effects of policy depend crucially on the prevailing governance environment. In Bihar, where there is a programmatic incumbent, policy appears to have a much more positive effect in supporting programmatic voting than in Jharkhand where retrospective voting rewards and collective action are impeded by clientelism.

¹⁸For example, a_b indicates that parameter a is estimated for every category of variable b .

Figure 22: Multi-Level Model of the Effect of Policy Exposure on Expectations of Incumbent Public Goods Delivery Either Side of the Border

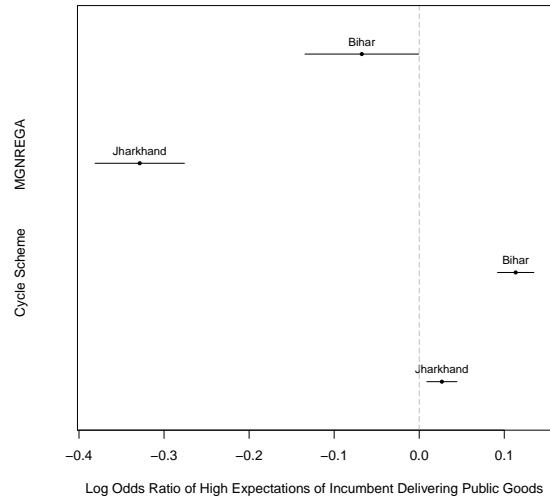


Figure 23: Multi-Level Model of the Effect of Policy Exposure on Expectations of Checks on Elite Corruption Either Side of the Border

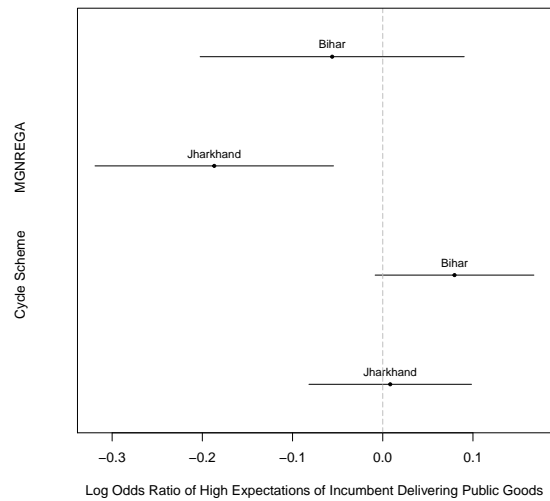


Figure 24: Multi-Level Model of the Effect of Policy Exposure on Expectations of Other Voters' Willingness to Sanction Poorly Performing MLAs Either Side of the Border

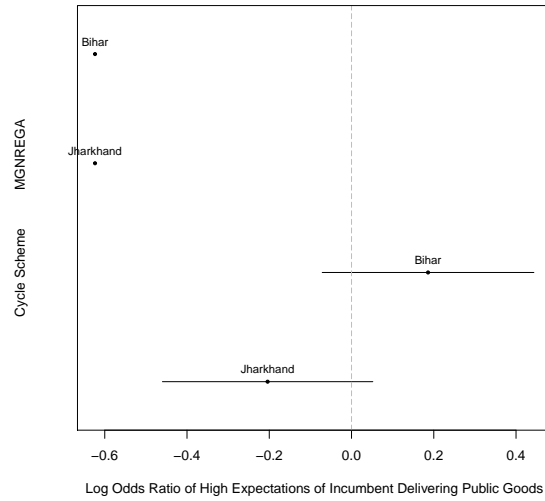
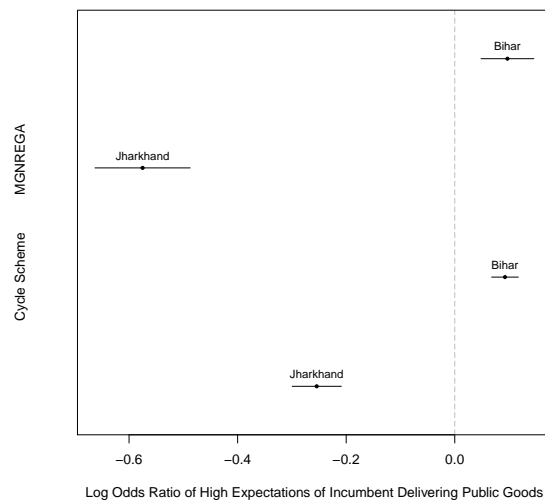


Figure 25: Multi-Level Model of the Effect of Policy Exposure on Voting for the Incumbent Either Side of the Border



7 Conclusion

The forceful critique mounted by [Imai, King and Velasco Rivera \(2016\)](#) that programmatic policy is likely to have little impact on voters' attitudes and behaviour has been strongly refuted by evidence of stark differences either side of the Bihar-Jharkhand border. In a context where programmatic and clientelist candidates are competing to decide how the state should be governed, the experience of programmatic policy can be a crucial coordinating device for voters that can help them pull themselves out of the clientelist trap. This has enabled programmatic governance in Bihar to be sustained over multiple electoral cycles despite intense clientelist competition and persistent poverty. The evidence from Bihar is not only a rebuttal to the idea that reform is unpopular and cannot generate its own support but also to the idea that socioeconomic modernization is the only route to prolonged programmatic governance. For incumbent reformers the crucial strategy to sustain their governance reforms and political careers is to ensure that the benefits of their policies are widely experienced and publicly shared, creating a strong coordinating signal.

The recognition that supply-led policy reform is capable of shifting the basis of voter behaviour suggests that there may be multiple equilibria in governance regimes, providing a natural parallel to the analysis of poverty traps in development economics ([Ghatak 2015](#)). However, those effects may also be temporary, tied to the current incumbent's reputation and unable to institutionalize permanent political demands for programmatic governance. Governance reform may succeed in liberating voters from clientelist networks, but the evidence suggests that a by-product may also be to reduce their political engagement, sapping trust in institutions and limiting participation. In Bihar, citizens do not yet possess a normative or instinctive aversion to clientelism so it is unclear how voting behaviour will respond once Nitish Kumar has left office. This suggests that governance reforms need to be accompanied by mitigating efforts to retain voter optimism and engagement. These may come in the form of new participatory opportunities, for example encouragements to attend Gram Sabha meetings, or in the form of new political movements, for example the construction of more ideologically committed parties that organizationally cement reformist reputations and outlast individual leaders. In the long-run, too, leveraging other mechanisms that generate programmatic demands, such as education and reduced poverty are also likely to play important roles in providing a permanent anchor to these remarkable experiments with programmatic governance.

Bihar has succeeded in prising apart the clientelist trap through policy entrepreneurship that has mobilized broad political support in the most difficult of circumstances. But many of the structural factors and political attitudes supportive of clientelism remain firmly entrenched, so that the clientelist trap is poised to snap back into place. If Bihar is to surprise

the world again and embed sustainable governance reforms it will need to transition from policy reforms to institutional reforms that anchor a long-term shift in citizens’ attitudes, expectations and behaviour.

8 Appendix A: A Model of Collective Confidence where Programmatic and Clientelist Governance Compete

To understand how programmatic policy exposure might alter the clientelist trap and in turn affect voters’ political choices, we require a theoretical model of voter behaviour. While many studies focus on atomized voters and their ‘sincere’ voting choice, that approach ignores the most powerful mechanism of the clientelist trap, namely that voters face the risk of material loss if they back a *losing* programmatic candidate. Unlike in more institutionalized contexts, voters therefore care deeply about how other citizens are likely to vote, since this shapes the payoffs and risks to backing different types of candidates. In short, it is vital to recognize the strategic nature of voting if we are to understand the scope for voters to escape the clientelist trap (Lyne 2007; Medina and Stokes 2002).

Modeling strategic voting requires a microfounded understanding of the choices voters face. A more complete and formal presentation of the model is provided in Phillips (2017). Consider the payoffs to a voter i in a simplified electoral model between candidates offering a clientelist and a programmatic strategy. Personal income that is shielded from political interference is B . In line with the definition above, clientelist candidates by definition provide selective rewards or punishments for voter support; programmatic candidates do not. If the programmatic candidate wins, all voters will receive the same benefits G regardless of who they voted for. If the clientelist candidate wins, only those who voted for them receive benefit $F \geq 0$. The voter has a utility function $u_i(\cdot)$, and if $u'(\cdot) > 0$ and $u''(\cdot) < 0$ the voter is risk-averse.

Table 12: The Clientelist Trap

	Winner of Election:	Clientelist	Programmatic
Vote for:	Clientelist	$u(B + F)$	$u(B + G)$
	Programmatic	$u(B)$	$u(B + G)$

There are N voters whose strategy space is defined by $\phi_i \in \{0, 1\}$, where $\phi_i = 1$ represents a vote for the programmatic candidate and $\phi_i = 0$ represents a vote for the clientelist candidate. The election is by simple majority and we assume N is odd for simplicity. The notation $\pi(\phi_i, \phi_{-i})$ denotes the probability that the programmatic candidate

wins when voter i supports the programmatic candidate with probability ϕ_i given the vector of other voters' choices ϕ_{-i} . The voter will rationally support the programmatic candidate where:

$$\begin{aligned} \pi(1, \phi_{-i})u(B + G) + (1 - \pi(1, \phi_{-i}))u(B) &> \pi(0, \phi_{-i})u(B + G) + (1 - \pi(0, \phi_{-i}))u(B + F) \\ u(B) + \pi(1, \phi_{-i})(u(B + G) - u(B)) &> u(B + F) + \pi(0, \phi_{-i})(u(B + G) - u(B + F)) \end{aligned}$$

The power of the clientelist trap is that each voter perceives they can access the benefits of the programmatic offer even if they do not vote for that candidate, alongside the risk of being punished if they fail to support a victorious clientelist candidate. The combination of a selective clientelist punishment and a flat programmatic reward strongly stacks the deck in favour of the clientelist choice. When we abstract from the individual voter's ability to influence the electoral outcome, so that $\pi(1, \phi_{-i}) = \pi(0, \phi_{-i}) = \pi$, voting clientelist becomes a weakly dominant strategy, providing no positive reason to ever vote for the programmatic option.

Nonetheless, while the selective incentive to vote programmatic may be absent, an indirect incentive remains, namely to increase the *probability* of programmatic victory by leveraging the gap between $\pi(1, \phi_{-i})$ and $\pi(0, \phi_{-i})$, which is desirable wherever $G > F$. Using the binomial expression to calculate the probabilities of victory and setting $p = Pr(\phi_{-i} = 1)$ to represent the symmetric strategy of all other voters, any individual voter will support the programmatic candidate where:

$$\left(\binom{N-1}{\frac{N-1}{2}} p^{\frac{N-1}{2}} (1-p)^{\frac{N-1}{2}} [u(B + G) - u(B)] \right) > \left(1 - \sum_0^{\frac{N-3}{2}} \binom{N-1}{N-1-i} p^{N-1-i} (1-p)^i \right) [u(B + F) - u(B)] \quad (7)$$

Notably, this game exhibits strategic complementarities because a higher p - the expected rate of programmatic voting among other voters - increases the relative returns for each to voting programmatic. Therefore when p is low, increasing p encourages higher programmatic voting. It does so because clientelism imposes a confidence trap - unless voters are confident that others will vote programmatic and provide a reasonable chance of victory, they will be reluctant to do so themselves to avoid exposing themselves to the risk of loss if the clientelist candidate wins. In politics with a long history and culture of clientelism, shifting expectations sufficiently to overcome this confidence trap is extremely challenging.

Two factors therefore dominate a citizen's voting decision: the relative value of G compared to F and expectations about which way other citizens will vote, p . Phillips (2017) provides a full signaling model to endogenize beliefs about future G and voter expectations, but for simplicity assume that the programmatic benefits G that voters experience today

are their best signal of future benefits from this incumbent candidate, and that voters have correlated experiences of programmatic benefits. These assumptions mean that a voter that has a positive experience of programmatic benefits will expect similar benefits if this candidate is re-elected - they will expect a higher G - and will believe that other voters had a similar experience and so are also likely to expect a higher programmatic benefit. More importantly, they will believe that other voters are likely to make the same inference about them, increasing their confidence that others will vote for the programmatic candidate, raising p . In turn, this means that each individual voter is more willing to vote programmatic, because the risk of backing a losing programmatic candidate is lower. In clientelist-dominated contexts the effect of a local incumbent introducing programmatic policy is therefore to stimulate voter *collective action* that can weaken and, ultimately, overcome the clientelist trap.

The scope for such an effect is considerable. In politics where clientelism is deeply embedded in history and culture, an unexpected and unprecedented experience of programmatic policy is likely to be among the most salient political facts that voters perceive. Moreover, the nature of programmatic policy produces an inherently public signal. When a voter seeking to receive a state service is *not* screened for their political affiliation, they can be confident that others are likely to have the same experience, precisely because of the neutrality and impersonality of the transaction. Since overcoming the clientelist trap is a collective action problem, that shared public experience provides the informational basis for voter coordination. Such a transformation in political consciousness and voting motivation would matter not just for who got elected, but for the very nature of the social contract between politicians and citizens and for the prospects of electoral accountability.

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