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Political Economy of Third Party Interventions*

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Abstract

The paper examines political economy consequences of a third party (World Bank) intervention in India. The intervention was a capacity building initiative that trained local politicians in various governance procedures in a sample of villages. We show that the state government reacted to the intervention by allocating additional resources to program villages with aligned incumbents while reducing allocation in program villages with rival incumbents. Consequently, party switching by opposition incumbents *went up* in program villages. Moreover, the reelection rate of incumbents *went down* due to the intervention, especially in GPs where no incumbents switched their party affiliations. The results highlight the importance of considering political economy consequences of such interventions, even in countries not heavily reliant on foreign assistance, to better understand its overall welfare effects.

JEL Classification: D72, D78, H43, H72, H77
Keywords: Policy Evaluation, Party Switching, Reelection, Gram Panchayat

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1 Introduction

Policy interventions by international as well as national non-governmental organizations are common in developing countries. The Structural Adjustment Program by the IMF, Community Development Projects by the World Bank, Global Polio Eradication Initiative (GPEI) by the Bill and Melinda Gates Foundation (BMGF) are examples of some large scale policy interventions undertaken by international organizations in various countries.[1] Domestic NGOs working on specific sectors (such as health or primary education) also provide parallel services to various policy initiatives of local and regional governments within a country.[2] Importantly, researchers often use third-party interventions, including interventions of their own (in the form of, say, Randomized Control Trials) to evaluate the effectiveness of various policies.[3] Third party policy interventions often allow the researchers to address some of the endogeneity problems in estimating program effects that may be present in evaluating government initiated public programs.

However, policymaking is inherently a political process. Therefore, any policy intervention by an outside entity is likely to engender responses by the domestic political actors. Researchers are cognizant of this fact. Guiteras and Mobarak (2015), for example, show that a sanitation subsidy intervention by researchers in villages in Bangladesh led to local politicians attempting to claim credit for the program. Such "credit claiming" behavior of politicians in response to third party interventions, especially when the source of funding is not transparent, has been observed in other contexts as well (see, for example, Böhnke et.al. (2010), Cruz and Schneider (2014), etc.).

[1] The scale of some of the programs is quite large. The BMGF, for example, has allocated USD 292 million in 2016 and USD 367.3 million in 2017 towards GPEI (GPEI Annual Reports). The World Bank has spent USD 85 billion in the period 2000-2010 towards community development projects across the world (Mansuri and Rao, 2013).

[2] The NGO Pratham in India, for example, provides various educational services for primary school children. BRAC is a similar organization providing primary education and health care services across Bangladesh.

[3] The set of such papers is too large to cite here. We cite some representative papers evaluating various types of policies using third party interventions. For example, Olken (2010) examines a governance intervention in Indonesian villages using a RCT that compares public good provision under elected politicians and via village meetings. With regard to education policies, Banerjee et.al. (2007) and Duflo, Dupas, and Kremer (2015), among others, study interventions in primary schools of India and Kenya, respectively. Tarozzi et al. (2014) and Olken, Onishi, and Wong (2014), on the other hand, estimate the effects of health interventions in India and Indonesia, respectively.

Credit claiming, however, is not the only possible political consequence of such interventions. How the domestic government reacts to a third party intervention depends, at least partly, on the *distribution* of political rewards generated by it. If part of the reward is accrued by the politicians who are aligned to the government, then the government may act in a way that can *complement* the intervention. However, if the intervention rewards rival politicians, then it may react by *undermining* it. The political economy effect of third party intervention, therefore, may depend on how the incentive of the domestic government interacts with the intervention. Moreover, some of the political economy consequences may not be desirable, and hence, can be consequential for the overall welfare implication of the intervention.

In this paper, we examine these concerns and provide evidence of such political economy consequences of an intervention by the World Bank in an Indian state. The intervention in question, known as the Institutional Strengthening of Gram Panchayats (ISGP) program, was a capacity building initiative that trained local politicians and officials in various governance practices (such as budgeting, maintaining accounts, digitization, holding regular meetings etc.) in a sample of 1000 village governments or Gram Panchayats (GPs from now on) in the state of West Bengal.[4] We show that the program led the state government to allocate additional resources to the "program GPs" (i.e., the GPs that are part of the ISGP program) with *aligned* incumbents (i.e., incumbents belonging to the ruling party). This resulted in a significant increase in rival incumbents switching their party affiliations in favor of the ruling party. The state government further *reduced* resource allocation from its own budget to the program GPs with rival incumbents who didn't switch, and thereby, undermining the intervention in those GPs. As a consequence, the overall reelection rate of the incumbents in the program GPs *went down* (relative to non-program GPs). The fall in the reelection rate is driven by the non-switchers (from the opposition parties) in the program GPs. We argue that intensifying party switching behavior among opposition incumbents and reducing the reelection rate of local politicians are two undesirable effects of the intervention.

Our results, therefore, demonstrate how even well intended and well implemented policy interventions by third party organizations may engender unintended political economy responses. This is especially striking considering the fact that the

[4]West Bengal has about $3,500$ GPs in the entire state.

intervention was primarily non-financial in nature and in a context where dependence on outside assistance (financial or otherwise) is relatively low.[5]

The ISGP program was launched in 2010 and was funded and implemented by the World Bank, in collaboration with the Panchayats and Rural Development Department of the Government of West Bengal. It was intended to improve the efficacy of the local politicians and officials in their delivery of public goods and services. Moreover, the GPs that received the training was later audited by the program officials, and the ones found to be performing better, received lump-sum grants ("ISGP grant") under the program. Importantly, the criteria used by the program officials to select GPs into the program allows us to use the regression discontinuity (RD) method to estimate the causal effect of the intervention. We discuss the selection criteria and the identification issues in detail in Section 4.1. Moreover, for some of the analysis we test heterogeneity in the program effect (across, say, aligned and non-aligned GPs). For this we use a method similar to the difference-in-discontinuity method described in Grembi, Nannicini, and Troiano (2016). We elaborate on this in Section 4.2.

We show that the intervention had no effect on the largest government scheme that the GPs implement –namely the National Rural Employment Guarantee Scheme (NREGS). It, however, did have a positive and statistically and economically significant effect on the relatively smaller government schemes, indicating that the intervention did improve the GP's ability to focus more on the potentially neglected but important activities of the GP politicians.[6] Moreover, the post-training audits of the program GPs reveal that their governance practices improved significantly in the years following the initiation of the ISGP program. Therefore, the state government believed that the intervention led to improvement in the governance capacity of the program GPs. This is important since apart from the central government schemes that the GPs implement, all GPs receive discretionary grants

[5]This is in contrast to the literature that discusses political economy effects of foreign aid, which is focused on countries that are heavily reliant on such aid to carry out their governance activities. Political economy effects in such contexts may be more likely. We elaborate on this later in this section when we discuss the literature review.

[6]The NREGS, unlike the other schemes, is highly politically salient, as the existing literature shows (Gupta and Mukhopadhyay (2016), Das, Mukhopadhyay, and Saroy (2018)). Therefore, the local politicians are invested in implementing the program well. Hence, it is likely that the scope for improvement in NREGS implementation through improvement in governance quality was minimal, to begin with.

from the state government to spend on various public goods. We show that the state government responded to the ISGP program by reallocating its discretionary grants to the program GPs.

We point out here that a new party—AITC—came into power in the state in the year 2011, a year after the program was launched, defeating a coalition of left parties (the Left Front) that was previously in power for multiple terms. In 2011, however, a majority of local governments were still ruled by the Left Front. Therefore, AITC sought to change this scenario and increase its presence in the upcoming local elections in 2013. The change in the political leadership in the state, therefore, created an incentive for the government to reallocate its resources to GPs. Importantly, the reallocation incentive interacted with the presence of the ISGP program. Since the program GPs were believed to have better governance capacity, the intervention would have rewarded the incumbents in the program GPs. We, therefore, hypothesize that the state government would have incentive to reinforce the effect of the intervention in program GPs which are aligned to the ruling party (i.e., where AITC incumbents are present) by allocating higher resources to them. We use a theoretical framework to argue that such a resource allocation strategy would maximize the presence of the ruling party in the local governments in the forthcoming local elections.

In the empirical analysis, we find that from 2010 onwards, the program GPs, on average, received higher per capita discretionary grants compared to non-program GPs, thanks to the ISGP grant.[7] However, consistent with our theoretical argument, we find evidence for heterogeneity in the treatment effect. We show that the aligned program GPs received even higher per capita discretionary grants (relative to non-aligned program GPs) from 2011 onwards (and *not before*).[8] The allocation was 32% higher in 2011-'12 and 19% in 2012-'13. Importantly, the aligned non-program GPs (i.e., aligned GPs from the same districts which were not part of the program) did not receive higher resources either after or before 2011.[9] Therefore, the result

[7]Before 2010 there was no difference in the allocation of discretionary grants between program and non-program GPs. This is expected given that the ISGP program began in 2010.

[8]In West Bengal elections in GPs happen at the level of wards within a GP. Each ward elects a councilor to the GP council. (See Section 2.1 for details.) Therefore, the incumbents in a GP are at the level of wards, while resource is allocated to the entire GP. Consequently, we define a GP to be aligned if the majority of councilors in a GP belong to AITC. The rest of the GPs are referred to as non-aligned.

[9]Since our identification strategy relies on the RD method, within the comparison pool GPs

can not be explained by the state government's general willingness to reward aligned GPs overall.

We show that as a consequence of the discriminatory allocation favoring aligned program GPs, probability of party-switching by the incumbent politicians *went up* significantly in program GPs. Moreover, most of the increase in switching was in favor of the ruling party. The practice of switching party affiliation among the local politicians in rural India is a fairly frequent phenomenon, as we show later in Section 6. Yet the issue is not well explored in the existing literature on the local governments in India. In this context, it is important to note the result, since the literature on party switching highlights that such behavior weakens the party structure and erodes trust in the political system. Desposato (2006), for example, argues that "party switching may be viewed as a challenge to representation when voters use party labels to cast ballots and pick policy platforms. Switching effectively destroys the meaning of party labels, raises voters' information costs, and eliminates party accountability. Switching can be viewed as a threat to the very core of democratic representation." The increase in party switching in program GPs, therefore, points towards a potentially adverse effect of the intervention. To the best of our knowledge, this is the first paper that shows how discriminatory allocation by higher level government to aligned local jurisdictions can lead to higher likelihood of party switching among rival local politicians.

Our theoretical analysis predicts heterogeneity in treatment effect with respect to whether the GPs had switcher incumbents or not. We hypothesize that the "switcher program GPs" (i.e., program GPs which had a switcher incumbent) would receive higher resources compared to "non-switcher program GPs" (i.e., program GPs without any switcher incumbent). Consistent with our prediction, we find that the switcher program GPs received 26% higher allocation in 2012-'13 relative to the non-switcher program GPs.[10] We then look at allocation of part of the discretionary grant that comes from the state budget, and is therefore directly controlled by the state government. We find that the allocation of discretionary grant from the state budget to the non-switcher program GPs was in fact reduced in 2011-'12 and 2012-

the program assignment is effectively random. Therefore, the aligned GPs in the sets of program and non-program GPs are not differentially selected.

[10]The switcher non-program GPs, however, never received any additional resources relative to non-switcher non-program GPs.

'13. Since resource allocation can complement the governance training program, the result suggests that the state government undermined the intervention in GPs where the opposition incumbents didn't switch in favor of the ruling party. Finally, we look at rerunning and reelection rates of the incumbents. We find that the intervention didn't affect the rerunning rate of incumbents. However, conditional on rerunning, the reelection rates of the incumbents in program GPs went down by 24%. The fall in reelection rate caused by the intervention is completely driven by the non-switcher GPs. This is consistent with our previous result that found reduced allocation of state budget grants to those GPs. Since reelection motive is considered to be an important accountability mechanism that disciplines incumbent's behavior, reduction in reelection rate is potentially also an adverse effect of the intervention. The ISGP program, therefore, though was benign in its intention and potentially did improve the governance capacity of the village governments, it ended up engendering potentially negative political economy consequences.

This paper contributes to the literature that shows that interventions from outside entities generate political economy effects at home. Apart from the credit claiming literature that we discuss above, there is a large literature on foreign aid that discusses its various political economy consequences. Many of these papers are in the context of African and Latin American countries, where aid constitutes a significant part of governments' resources. This is in contrast to the context we study, where such dependence on financial and institutional assistance from third party entities is minimal. Setting aside the contextual distinction of our study, our work also contributes to the literature in more substantive ways. Some papers in the foreign aid literature discuss how aid resources (i.e., the intervention itself) can be strategically manipulated by the domestic government to achieve favorable political outcomes. Briggs (2012), for example, shows that the incumbent government in Ghana directed World Bank funds from an electrification project strategically to constituencies which benefitted them in the elections. Similar evidence has been found in the context of Kenya (Jablonski (2014), Briggs (2014)) and Zambia (Masaki (2018)) as well. Our work, on the other hand, shows that the domestic government's own policy can also respond to third party intervention. Other papers in the foreign aid literature highlight the negative impact of aid on certain political outcomes, such as corruption (Isaksson and Kotsadam (2018)), civil conflict (Nunn and Qian (2014)), deterioration of institutions (Djankov et al. (2008),

Busse and Gröning (2009)) etc. We contribute to the literature by showing negative impacts of intervention on reelection rate and party switching behavior of local politicians. Moreover, the results highlight that political turnover, i.e., change of political power mid-way through a program implementation can substantially affect program outcomes by changing political incentives.

We also contribute to the literature that examines allocation of public resources by a higher level government across local jurisdictions. Bardhan and Mookherjee (2006), for example, point out that the state government in West Bengal (under the Left Front) did engage in strategic allocation resources across GPs to favor certain groups. Khemani (2003), on the other hand, argues that in the context of India, constitutional rules can limit the extent to which resource allocation is determined politically. Several papers point out that politically aligned regional or local governments get higher resources from the higher level government (see Solé-Ollé and Sorribas-Navarro (2008) for evidence from Spain, Worthington and Dollery (1998) for Australia and Levitt and Snyder (1995) for USA etc.). Our paper shows that such incentives for strategic allocation can get more pronounced in presence of a third party intervention that claims to improve governance qualities of local governments. Moreover, we show how party allegiance of local incumbents can also respond to such differential allocation to aligned jurisdictions. Finally, it also adds to the set of papers that examine party switching behavior of politicians in other contexts (such as Reed and Scheiner (2003), Yoshinaka (2005), Desposato (2006), Barrow (2007), Grose and Antoine (2003) etc.). While these papers mostly focus on national level legislatures and discuss the various factors that shape their party defection decisions, we study this phenomenon in local elections in India and highlight how it can be used by the incumbent government to undermine the effect of an intervention.

The rest of the paper is organized into the following sections: section 2 lays out the background and institutional details, section 3 describes the theoretical framework we use to form our hypotheses, section 4 elaborates on the empirical methodology, section 5 presents the data and the summary statistics, section 6 discusses the results, and finally, section 7 makes concluding observations.

2 Institutional Details and Context

2.1 Village Governance in India

The village council or Gram Panchayat is the lowest tier of governance in India. It is part of a three-tier governance structure that all Indian states adopted after the 73^{rd} Constitutional amendment in 1993. In this system, each state is divided into a number of districts. West Bengal, for example, has 18 districts. The districts are further divided into blocks which are in turn divided into GPs. Each of the three tiers is governed by an elected council headed by a president. The GP council is composed of council members each of whom is elected from a single member ward within a GP. Each GP has a president, known as the *sarpanch*, analogous to a mayor in a municipality. All the ward representatives or councilors are elected every five years in a local election. In West Bengal, the GP president is elected indirectly, by the elected council members from among themselves.[11] Therefore, the elections in a GP in West Bengal happen at the GP-ward level. Importantly, unlike in most other Indian states, political parties can nominate candidates in the ward level elections in West Bengal. Therefore, we know the party affiliations of the candidates as well as the incumbents.[12]

The council members of a GP decide on their activities through deliberations in their internal meetings. The primary responsibility of a GP council is to provide local public goods, such as village roads, drinking water facilities (hand pumps, wells, etc.), primary schools, health centers, irrigation facilities (such as public canals, watersheds) etc. The GPs, however, have minimal taxation power and hence their own resources can hardly suffice to meet their expenditure needs. Their expenditure is met by resources received from higher tier governments, i.e., the state and the central governments. These resources received by the GPs can be divided into two broad categories - tied and untied (or discretionary) funds.

Tied funds are those which are earmarked to be used for a particular government scheme or program. GPs are usually the implementing agencies of these schemes. We mention four such important schemes. The National Rural Guarantee

[11] In some other states of India, the *Sarpanch* is directly elected by the voters, as in a presidential system.

[12] In most states of India political parties can not formally nominate candidates in local elections. Therefore, even though the local candidates may have party affiliations, it is not observable to the researchers.

Scheme (NREGS) program is a large public works program run by the central government under which one adult member from each rural household is entitled to 100 days of employment in a year. Employment is generated by implementing various public projects in the villages. This is by far the most politically salient program and received a lot of attention from researchers. Among the other central government schemes that GPs implement include the IAY (Indira Awas Yojna) which provides subsidy to poor households to build a house, the National Rural Health Mission (NRHM) which provides affordable primary health care services, including maternal health and child care services, to the rural population, and the Backward Region Grant Fund (BRGF) which provides additional resources to backward regions of India to meet their local infrastructure needs etc.

Each GP also receives untied or discretionary grants primarily from both the central government as well as the state government. These grants are not earmarked for any government program and therefore can be used for the provision of public goods at the discretion of the GP council. The grant from the state government constitutes a large share of the total discretionary grants. The state government, therefore, enjoys a greater degree of control over the amount of discretionary funds that the GPs receive. The allocation of resources for the central government schemes is decided by the relevant ministries of the central government. Therefore, the state government has limited capacity to influence its allocation across the GPs within the state.

2.2 ISGP Program

In September 2010, the World Bank initiated a program in collaboration with the state government of West Bengal to strengthen the institutional capacity of local governments by providing training to the GP politicians and officials. The program is called the Institutional Strengthening of Gram Panchayats (ISGP). The program officials first identified nine districts where they wished to focus on and then selected 1000 GPs from the 1684 GPs present in those districts to implement the program.[13] We refer to these GPs as "program GPs" and the 684 GPs not selected from the nine districts as "non-program GPs." Figure 1 shows the program GPs in shaded

[13]The districts are Bankura, Birbhum, Bardhaman, Coochbehar, Dakshin Dinajpur, Howrah, Nadia, Paschim Midnapur and Purba Midnapur.

areas in a map of West Bengal.[14] We observe that they are spread throughout the state and therefore, are geographically dispersed. We discuss in detail the criteria used to identify the program GPs in the section on identification strategy (Section 4.1).

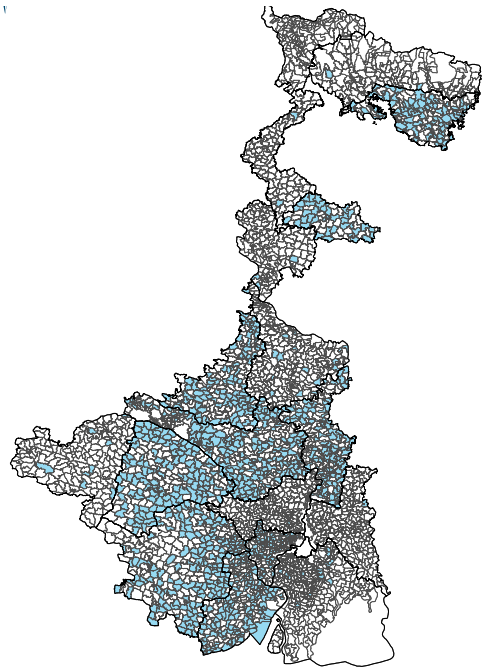


Figure 1. The ISGP Program GPs in West Bengal

The program had two components –governance training and allocation of discretionary grants. A team of program officials at the state level trained a number of teams of officials in each of the nine districts identified for the IGSP program. The district teams then, in turn, visited the respective program GPs and trained the politicians and the local officials in the GPs through onsite handholding. The training involved best practices in budgeting, preparation of annual plans, maintenance of accounts of revenue and expenses, usage of computers and digital software for these activities, following procedures for holding village meetings and meetings of council members, maintenance of compliance protocols and various other governance issues. There were in total 62 teams involved in training the local functionaries of the 1000 GPs and, a team on average spent 24 mentoring days in each GP for the

[14]The ISGP program is still continuing in the state and since the fiscal year 2016-'17, it has been expanded to cover the entire state of West Bengal.

purpose of training. In the subsequent years following the training, the monitoring and audit wing of the program sent auditors to each of the program GPs to audit their governance practices on an yearly basis. Moreover, the program provided an annual discretionary grant to the program GPs which were found to be performing well according to the audit. This discretionary grant (the "ISGP grant"), like any other discretionary grant, could be utilized for the provision of any local public goods and services. For the program GPs, therefore, the total discretionary grant includes the ISGP grant as well. The ISGP program is managed from within the relevant department of the state government. Further, the government officials were also involved in the planning, execution, monitoring, and auditing of the program. Therefore, the state government exercised control in the allocation of ISGP grant as well. In the first three years since the program began, 483, 841, and 794 GPs qualified for the ISGP grant for the financial years 2010-'11, 2011-'12, and 2012-'13, respectively.[15] In the year 2012-'13, the average size of the ISGP grant was about 1.8 million rupees per GP.

2.3 State and Local Elections in West Bengal

In West Bengal, as in the rest of India, both state and local elections happen in every five years. However, the two types of elections are not synchronized in the state –the local elections happen two years after the state level election. Figure 2 shows the timeline of the elections in the state for the period 2008–2013. The state election in 2011 is a critical one as a new party –AITC (All India Trinamool Congress) –came into power that year defeating the coalition of Left parties, known as the Left Front, led by the CPI(M) (Communist Party of India - Marxist). Prior to the 2011 election, the Left Front had been in power in West Bengal for multiple terms. Importantly, they had a sizable presence in the local governments as well. In the 2008 GP elections, for example, a majority of wards in our sample GPs were won by the Left Front. They were also the majority party in a majority of GPs. We discuss this in further detail in Section 5.2. Therefore, post 2011 while the AITC was in power in the state government, the Left Front had a significant presence in the local governments. It is therefore expected that the new ruling party, AITC, would seek to change this scenario in the forthcoming local elections in 2013.

[15] For the financial year 2010-'11 the grant was meant for only six months, as the program began in September 2010.

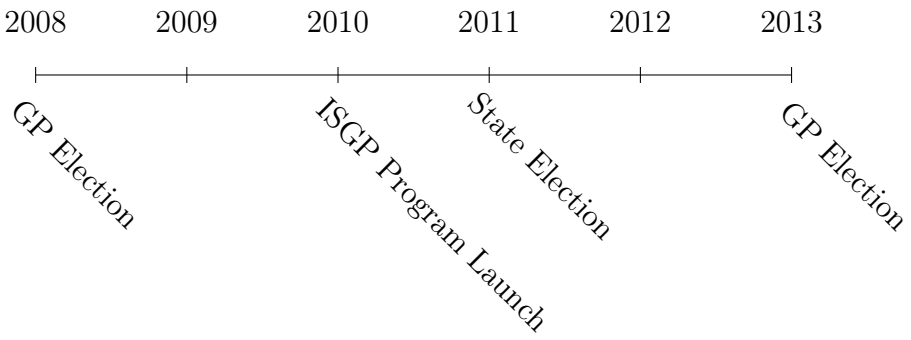


Figure 2. Election Timeline

Since the state government allocates discretionary grants to GPs, as mentioned previously, the new ruling party could potentially use it to influence the outcome in its favor. If we look at the GP election outcomes, we do observe that the share of wards won by AITC doubled in 2013. In sharp contrast to 2008, in 2013 AITC was the majority party in bulk of the GPs in the state. Now, the ISGP program was introduced in 2010, i.e., the year before the state level election took place. In the next section, we conceptually examine the consequences of such an intervention on the resource allocation strategy of the new state government in power after 2011 with an objective to maximize its party's performance in the upcoming local elections.

3 Theoretical Framework

To understand the potential implications of the ISGP intervention we posit in this section a basic theoretical framework. It helps us form expectations regarding the kind of patterns we expect to observe in the data and guides our empirical tests in the next section. We conceptualize the problem as an optimization exercise for the state government. For simplicity we assume that the state has a two-tier governance structure - the state government above and a number of local governments or GPs below. The state government has to allocate a given sum of money (say, state resources available for transfers to the local governments) across the GPs. However, the ruling party of the state is in power in some of the GPs while the opposition parties rule in the rest of the GPs.[16] The objective of the state government is to max-

[16]To keep the theoretical analysis simple we assume that in each GP there is only one incumbent politician and she can belong to either the ruling party of the state government or one of the

imize the presence of the ruling party across local governments in the forthcoming local elections. The probability that an incumbent gets reelected in the forthcoming local election depends on how much resource the GP has received from the state for the provision of local public goods and services (denoted by r), and the governance quality of the GP (denoted by g). g therefore denotes the GP's overall managerial quality or the level of efficiency with which they implement public projects. Importantly, r and g are *compliments* in nature, in determining the reelection probability of the incumbent. Suppose the probability of reelection of an incumbent, denoted by p, is expressed as a function of r and g, i.e., $p = p(g, r)$. We assume that

$$\frac{\partial p}{\partial g} > 0, \quad \frac{\partial p}{\partial r} > 0, \quad \text{and} \quad \frac{\partial^2 p}{\partial g \partial r} > 0.$$

This means that p is increasing in both the arguments, and governance quality and resource allocation are complimentary in nature. Therefore, the same allocation of resources to a GP would have a larger effect on its incumbent's reelection chances if the GP has a higher governance quality.[17] To keep things simple, we assume that initially all GPs have the same governance capacity, i.e, $g = g_0$ for all GPs.[18] The state government is aware of the governance qualities and incumbents' party affiliations of all GPs. It, therefore, chooses the allocation of resources to GPs to maximize its objective stated above. This would readily imply that the state government's allocation to a GP would depend on the party affiliation of its incumbent. Specifically, within two GPs that are controlled by different parties, the one with the ruling party in power would be allocated a higher amount of resources compared to the one ruled by the opposition.[19] Therefore, in absence of any third

opposition parties. We interpret it as a GP having either a "high" presence of the ruling party (i.e., a larger number of council members belonging to the ruling party), or a "low" presence, respectively. In the empirical analysis, we accordingly categorize GPs based on whether majority of incumbents in the GP belong the ruling party.

[17]Notice we do not need the cross partial to be high in magnitude. As long as it is positive, i.e., there is some complementarity between g and r, our results would follow.

[18]In reality, the GPs are likely to be heterogeneous in their governance qualities. However, we empirically estimate the causal effect of the ISGP program by using the regression discontinuity design (RDD) method (see Section 4 for details). Hence within our comparison pool of GPs, the governance quality would be similar across all GPs.

[19]To get interior solution for resource allocation to opposition GPs, we assume that it is costly for the state government to allocate lower than the average resource to any GP and the cost is convex in the difference between the resource allocated and the average resource. The source of the cost could be the public pressure created by the opposition parties through media and

party intervention, one should expect that the GPs with the ruling party in power gets a higher allocation of state resources, i.e., $r^{ruling}(g_0) > r^{opposition}(g_0)$, where $r^{ruling}(g_0)$ is resource allocation to a GP controlled by the ruling party and with $g = g_0$. Similarly, we define $r^{opposition}(g_0)$.

With this baseline, rather straight forward, result in place, one may now analyze how the ISGP intervention on a subset of GPs may affect the state government's resource allocation problem. As part of the intervention, all the program GPs receive governance training as well as some additional resources (the IGSP grant).[20] The intervention leads to an increase in the governance quality of the program GPs from g_0 to g_H ($g_H > g_0$).[21] Now, due to the complementarity between governance quality and resource allocation, within the set of GPs where the ruling party is in power, the state government would allocate higher resources towards a program GP *relative to* a non-program GP. This is because for the same increase in resource, the incumbent from a higher quality GP would experience a greater increase in her reelection probability than the incumbent from a lower quality GP. Therefore, even though the program GPs, on average, receive higher total resources (thanks to the ISGP grant), the increase in resources is even greater for the subset of GPs with the ruling party in power. Hence,

$$r^{ruling}(g_H) - r^{ruling}(g_0) > r^{opposition}(g_H) - r^{opposition}(g_0) > 0 \tag{1}$$

We summarize this insight in our first hypothesis:

Hypothesis 1 *The program GPs, on average, receive higher resources. However, for the subset of GPs where the ruling party is in power, the allocation to the program GPs is even greater.*

At this point, we introduce in this framework the possibility of party switching by incumbent politicians. As we will discuss later in Section 6, party switching is a common, though less explored, phenomenon in the local political economy of rural

demonstrations etc. to protest against any discriminatory allocation. In absence of any such cost, the state government would always prefer to allocate zero resource to all opposition GPs.

[20] This is a simplifying assumption. In reality some program GPs didn't receive the ISGP grant even though they received the training, as we describe in Section 2.2.

[21] This is not necessary for us. Even if the program didn't significantly increase the governance quality of the program GPs, as long as the state government perceives it to be the case, the results would follow.

India. The possibility of local politicians switching their party affiliations allows an additional channel through which the ruling party at the state can improve its presence in the local governments. In the subsequent discussion, we examine the implication of such a possibility.

Suppose some of the incumbents are willing to switch their party affiliation.[22] Clearly, if switching incentives are, at least partly, shaped by resource allocation then, the opposition party incumbents would have a greater incentive to switch to the ruling party than the other way around. Moreover, Hypothesis 1 implies that, we should expect a higher degree of party switching in the program GPs compared to non-program GPs. This is because of the following reason: rearranging equation (1) gives us

$$r^{ruling}(g_H) - r^{opposition}(g_H) > r^{ruling}(g_0) - r^{opposition}(g_0). \tag{2}$$

Here, $(r^{ruling}(g_0) - r^{opposition}(g_0))$ represents the gain in resource for an incumbent belonging to an opposition party in a non-program GP switching her affiliation to the ruling party. Similarly, $(r^{ruling}(g_H) - r^{opposition}(g_H))$ represents the same in a program GP. Therefore, equation (2) shows that incumbents from opposition parties gain more resource from switching if they belong to a program GP. This gives us our next hypothesis:

Hypothesis 2 *The intervention increases party switching behavior. Switching is in favor of the ruling party in the state government.*

Further, if we compare two switchers, one each from a program and a non-program GP, we expect the switcher in program GP to have a higher allocation of resources, as apparent from equation (2). We collect this observation in the following hypothesis:

[22] There could be unobservable characteristics of the incumbents, such as (lack of) loyalty towards a party or (lack of) belief in a specific ideology etc., which could make them more prone to party switching. We assume that such incumbents are present in equal proportions across both program and non-program GPs. This implicitly assumes that the intervention was done on a randomly selected subset of GPs. In reality, the program GPs were not selected randomly, as we describe above. However, as before, our RDD methodology in the empirical analysis ensures that within our comparison pool of program and non-program GPs, the program assignment was effectively random.

Hypothesis 3 *Within the set of GPs where the incumbents switch party affiliations, the program GPs receive more state resources than non-program GPs.*

Our theoretical analysis, therefore, highlights the importance to take into account how the state government may respond to an intervention. It shows that the response from the state government generates heterogenous effects of the intervention. We now turn to the discussion on empirical analysis where we show evidence in favor of this heterogeneity by testing the hypotheses.

4 Empirical Methodology

4.1 Identification

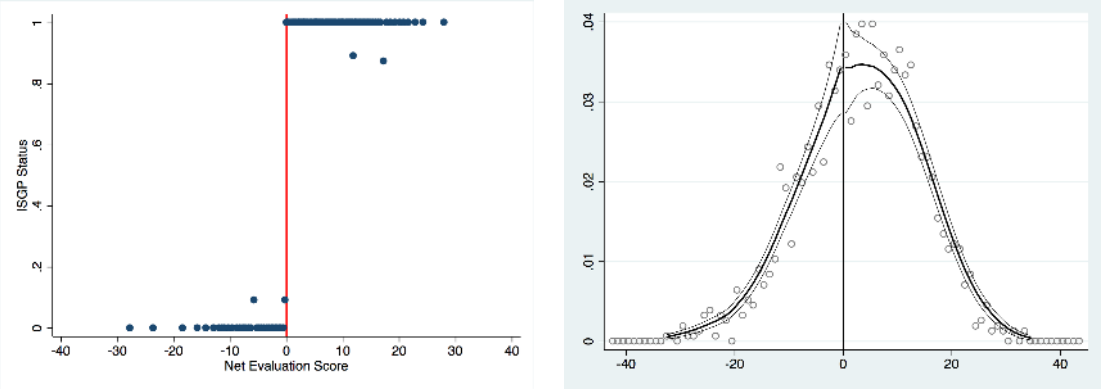
We wish to estimate the causal effect of the ISGP program on various outcome variables to test our hypotheses. However, the program GPs were not randomly selected. Therefore, we can not simply compare the average values of the outcome variables in program vs. non-program GPs. The program officials first selected nine districts from the full list of 18 districts of West Bengal, since these were the most well-functioning districts of the state. The officials then used an index of performance created by the state government, known as "self-evaluation scores," to select the 1000 GPs out of the total 1684 GPs present in the 9 districts. These scores, ranging from 0 to 100 in value, were created using the responses of the GP functionaries in a Self Evaluation Survey conducted in 2007-'08. The survey was conducted by the relevant department of the state government for the entire state and had been done on an annual basis for the previous few years as well.

The survey asked a range of questions on attendance of villagers in Gram Sansad meetings[23], civic services (such as road construction, wells and drainage repairing etc.) delivered, pro-poor activities undertaken, physical infrastructure constructed, mobilization and utilization of resources, management of GP offices and documents etc. Each of these items were scored based on how well a GP had performed on them, as reported by the GPs. The aggregate score created from the individual scores is referred to as the self-evaluation score.

The program officials used a cut-off value of the self-evaluation score to select the GPs into the program. We, therefore, identify the causal impact of the

[23]Gram Sansad meetings are regularly held village meetings where villagers can voice their demands for various public goods to the local politicians.

ISGP program by exploiting the fact that inclusion of GPs into the ISGP program is plausibly exogenous across GPs around the cut-off score. Hence, we use a sharp regression discontinuity design (RDD) to select our treatment and control GPs. The threshold value of evaluation score that was used to decide inclusion into the program was district specific. This is because for each district, GPs were ordered according to their evaluation scores and the top 60% GPs were included in the program. We therefore create a *net evaluation score* which is the evaluation score of a GP net of the relevant district specific cut-off and use that as our forcing variable. If the variable takes negative value then the GP is not included in the program, while a positive value would mean that the GP is part of the program. Figure 3(a) shows the distribution of the ISGP status GPs (included or not) as a function of the net evaluation score. We observe that there is a strict discontinuity in the program status of GPs at the net evaluation score of zero.



(a) Discontinuity in Evaluation Score (b) McCrary Test

Figure 3. Random ISGP Status Assignment at the Evaluation Score Cutoff

It is important to emphasize here that the self-evaluation survey that the program officials used was conducted in 2007-'08, i.e., three years prior to the ISGP program. The GP politicians had no knowledge of the ISGP program at that time. Therefore, there is no reason to believe that there was manipulation of this score around the (district specific) cut-off to get in or out of the program. We formally test this claim by carrying out the McCrary test. Figure 3(b) plots the density of the net evaluation scores for negative and positive values separately. We see that the densities are not statistically different from each other at the cut-off value

of zero. To further bolster our claim that the RD design helps us identify the causal impact of the program, we show that various baseline characteristics of GPs, such as total population, population belonging to SC/ST groups, sex ratio, etc., move continuously as a function of the forcing variable at the cut-off value of zero. Appendix Table A2 reports the results of running a RDD specification on nine baseline characteristics. For all the variables we get that there is no discontinuity at the threshold score, implying that the GPs which are on both sides of the cut-off and are in the neighborhood of the cut-off are comparable in terms of baseline characteristics. Therefore, any discontinuity in the outcome variables at the cut-off score can be attributed to the causal effect of the program.

The rationale for using the evaluation score as the selection criteria, as explained by the program officials, was that the evaluation score is supposed to capture how well-functioning a GP is. The program officials intended to initiate the program in the most well-functioning GPs within each district. Since the nine districts chosen for the program have 1684 GPs, and the budget for the program dictated that they could roll out the program only in 1000 GPs, they chose the top 60% GPs within each district using the evaluation score. Whether the claim of the program officials is true or not is, however, hard to say. Since the score is based on the responses of the GP officials to a survey, the score could be a very noisy index of governance quality.[24] Whether the score is a good measure of governance quality or not, however, has no bearing on our identification strategy. As long as the nature of the relationship between the evaluation score and governance quality, howsoever complex, doesn't change discontinuously around the district specific cut-off points, the RDD method would give us the correct estimate of the causal effect of the program.

4.2 Empirical Strategy

We consider two sets of outcome variables for our analysis —the GP resource allocation and the electoral outcomes of the incumbents. We note that even though the elections in a GP happen at the level of wards, the revenue received is at the

[24]We regress the net evaluation score of GP on its per capita NREGS expenditure and per capita person-days generated under NREGS in the year 2012-'13, controlling for a host of GP level observables and district fixed effects. We find that higher net evaluation score is indeed positively correlated with greater NREGA implementation (see Appendix Table A1).

level of the entire GP. Our unit of analysis is, therefore, either a GP or a ward within a GP depending on which outcome variable we focus on. Moreover, some of our empirical exercises involve testing for heterogeneity in the program effects. For example, Hypothesis 1 tests whether the intervention led to additional resources being allocated to aligned program GPs (i.e., program GPs with AITC in power). We therefore have to identify heterogeneity in the discontinuity (across aligned and non-aligned program GPs). Hence, we propose an approach similar to the *difference-in-discontinuity* method proposed by Grembi, Nannicini, and Troiano (2016). We first compute the optimal bandwidth for an outcome variable, h^*, using the MSERD method proposed by Calonico, Cattaneo, and Titiunik (2014). We then restrict the sample to GPs with net evaluation scores in the range $[-h^*, h^*]$.[25] To test for heterogeneity claimed by Hypothesis 1 we define a dummy variable M_{gd} which takes value one if the GP g in district d has majority of council members belonging to AITC party at the baseline (i.e., after the 2008 GP elections), and zero otherwise. We say that GPs with $M_{gd} = 1$ are ruled by AITC and refer to them as aligned GPs. Since decision-making within GPs happens through deliberation and negotiation among council members, this we believe is a fair assumption to make. Finally, we run the following specification:

$$\begin{aligned} R_{gd} &= \phi_d + \gamma_1 \mathcal{I}[score_{gd} > 0] + \gamma_2 M_{gd} + \gamma_3 \mathcal{I}[score_{gd} > 0] * M_{gd} \\ &\quad + \beta_1 score_{gd} + \beta_2 \mathcal{I}[score_{gd} > 0] * score_{gd} + \epsilon_{gd}, \end{aligned} \tag{3}$$

where R_{gd} is per capita resource allocation in GP g in district d, $score_{gd}$ is the net evaluation score of the GP, and ϕ_d is district fixed effect. β_1 ($\beta_1 + \beta_2$) captures the linear relationship between the outcome variable and the net evaluation score to the left (right) of the threshold score. We use local linear regression on the two sides of the threshold following Grembi, Nannicini, and Troiano (2016).[26] Many

[25] The value of h^* and hence the estimation sample would depend on the specific outcome variable considered. Therefore, the sample size may vary across outcome variables.

[26] The context of Grembi, Nannicini, and Troiano (2016) requires them to test for heterogeneity in discontinuity over time (before and after changes in fiscal rules). Therefore, they allow the linear relationships to also change over time. In our context, the source of heterogeneity is cross-sectional (across aligned and non-aligned GPs, for example). Therefore, we have the same linear fit for each of the control and treatment samples. However, we test specification (3) for *each year* within the tenure of a GP council separately. Therefore, in our analysis we do allow β_1 and β_2 (and all other coefficients) to vary over time.

researchers also propose this as the benchmark, or even the ideal design in contexts involving RDD (see Gelman and Imbens (2019), Imbens and Lemieux (2008)). γ_1 is the discontinuity in resource allocation at the threshold score for GPs which are not aligned. Hence, γ_1 is the causal effect of the intervention on the non-aligned GPs. $\gamma_1 + \gamma_3$, on the other hand, is the effect of the program on the aligned GPs. Hypothesis 1 predicts that both $\gamma_1 > 0$ and $\gamma_3 > 0$. We use district fixed effects to ensure that we compare the treatment and control GPs within a district. Since the GPs are spread through out the state and the resource allocation strategy may vary by geographic region of the GPs, owing to historical and topographical factors, absorbing the district specific characteristics makes the estimation sharper.

We explain the test of Hypothesis 1 to elaborate on our empirical strategy in general. The testing of Hypothesis 2 doesn't require any test of heterogeneity. Hence we use the standard RDD method in that case. Hypothesis 3 again involves test of heterogeneity. The empirical strategy for the test, therefore, is similar to the one explained here. We discuss the specification for the test in the relevant segment of Section 6 where we discuss the results.

5 Data Description

5.1 Sources and Compilation

We compile several administrative datasets from four different sources for our analysis. We describe the datasets below.

Election Records and Coding of Incumbent Behavior: The detailed ward-level election records for the 2008 and 2013 village elections are obtained from the State Election Commission. The dataset contains the names and party affiliations of all the candidates, along with their vote tallies. We match the names of the candidates across the two elections to create markers for the council members from 2008 election who were rerunning in 2013 and who got reelected. For a given council member in a ward in a GP in 2008, we search for a candidate with the same name appearing in the candidate list of any ward election *within* the GP in 2013. If the name appears then we code the council member to be rerunning in 2013. Similarly, if there is a winner in any 2013 ward election within the GP with the same name as

the council member then we code the council member as reelected in 2013.[27]

Since the election results contain the party affiliations of the candidates, one can also match the party names across the two elections for the subset of incumbent council members from 2008 who chose to rerun in 2013. We check if the rerunning incumbents have the same party across two elections or not. If the party names do not match, then we code the incumbent as a "party switcher." This allows us to compute party switching rates of incumbents across GPs in our sample. This method suffers from the same problem of miscoding as the name matching method. However, the causal effect of the program on party switching behavior should still be valid for the reason explained in the previous footnote. One additional issue with this approach is that we only observe party switching by those incumbents who chose to rerun in 2013. However, we are interested in the incentive of the local incumbent to switch parties only if she is rerunning. This is because the state government's resource allocation strategy would depend on the behavior of only those incumbents who are rerunning as they could potentially be co-opted to increase the ruling party's presence in the GP. Therefore, we do have the necessary information regarding party switching behavior that we need for the analysis.

GP Budgets: It is generally hard to get data on GP level budgets, as the GP accounts are not streamlined and digitized in most states of India. We, however, were able to access from the office of the fourth State Finance Commission (SFC) of West Bengal, the yearly revenue and expenditure details of GPs for the period 2008–2013. The dataset on GP budget contains detailed information on revenue received from various sources as well as expenditure carried out under various heads for every year during 2008–2013. One of the primary objectives of the SFC is to propose a formula to allocate across GPs (and other local government entities) the state government's resources dedicated to local governments. For this purpose, they had carefully collected this data from each GP. Moreover, they had sent out teams of inspectors to a subset of GPs to verify their actual accounts to get a sense of the

[27]Understandably, this method may have errors. It is quite possible that a different individual bearing the same name as one of the incumbent council members may be running for election in the same GP. Therefore, our measures of rerunning and reelection rates could potentially be higher than what they truly are. We, however, should not expect the extent of such errors to change discontinuously around the evaluation score threshold. Therefore, the estimates of the causal effect of the program on these rates should still be valid.

budgets. Therefore, it likely that the data is of high quality. We compliment this dataset with official records on NREGS expenditure details for the year 2012-'13, available from the official portal of the program: www.nrega.nic.in. Since we have the information about NREGS expenditures for 2012-'13 from the SFC data as well, we are able to verify the accuracy of SFC reports. We find that on average there is no difference between the two figures, which gives us confidence in using the SFC data for our analysis.

ISGP Administrative Data: We collect administrative data regarding the ISGP program from the ISGP Project wing within the Panchayats and Rural Development Department, Government of West Bengal. The dataset includes the evaluation scores of all the GPs in the 9 districts initially chosen by the program officials for the years 2005-'06 to 2008-'09.[28] It also contains some additional information about the quality of governance practices of the program GPs as assessed by the program auditors.

Demographic Data: We match the datasets with details of demographic information of the GPs, such as total population, sex ratio, SC/ST population, etc. The demographic dataset was compiled by the fourth State Finance Commission (SFC) using the census of 2011 and was generously shared by the SFC officials.

5.2 Descriptive Statistics

Table 1 reports the descriptive statistics for demographics, election data and GP's revenue and expenditure figures. We have complete election data for 17345 unique wards across 1370 GPs comprising of both ISGP and non-ISGP GPs for 2008 and 2013. Of these GPs, the demographic details are for 1351 GPs.

Panel A in Table 1 shows the descriptive statistics related to demographics. The average population of GP is $20,261$ of which 36% belong to scheduled class (SC) or scheduled tribe (ST) groups.[29] The literacy rate and sex ratio of the sample GPs are 0.77 and 0.93, respectively. Panel B reports the summary of electoral outcomes. It shows that on average 17% of the incumbents from 2008 reran for office in 2013

[28] We only use the evaluation score based on the 2007-'08 survey for our purpose.

[29] The Scheduled Castes (SCs) and Scheduled Tribes (STs) are officially designated groups of historically disadvantaged people in India.

Table 1—Summary statistics

Variable	Mean	Standard Deviation
Panel A: Demographics		
Total Population	20261.69	5995.10
SC/ST population share	0.36	0.19
Literacy rate	0.77	0.10
Sex ratio	0.937	0.022
Panel B: Local Election		
Share of AITC Seats in 2008 elections	0.25	0.26
Share of AITC Seats in 2013 elections	0.50	0.42
Rerun rate in 2013 elections	0.17	0.38
Reelection rate in 2013 elections	0.08	0.27
Rate of Party Switching in 2013 elections	0.22	0.41
Rate of Party Switching in favor of Ruling Party	0.12	0.33
Rate of Party Switching to Independent Candidate	0.04	0.21
Panel C: GP Revenue & Expenditure in 2012-'13		
Per capita total discretionary grant	133.18	71.19
Per capita expenditure on public services and infrastructure	141.43	345.21
Per capita NREGS expenditure	526.25	421.52
Per capita BRGF expenditure	21.38	31.69
Per capita IAY expenditure	1.39	21.46
Per capita NRHM expenditure	3.92	6.56

Notes: The Panel A and Panel C variables are at the level of GP, while the Panel B variables are at the level of ward-GP. The Panel C figures are in Indian Rupees.

elections and 8% got reelected. The reelection rate, therefore, is low in GPs in West Bengal, which is not unlike the other states of India (Banerjee et al., 2017).

Panel C reports the revenue received under discretionary grants and expenditure carried out under the various central government programs for the 2012-'13 financial year. The total per capita discretionary grant received by an average GP is about 133 rupees. An average GP spent about 526 rupees per capita under the NREGS program, which indicates that it is the largest expenditure head in an annual budget of a GP. The other schemes, such as the BRGF, IAY and NRHM together constitute a small fraction of the overall spending by a GP. Apart from the central government schemes, the GPs on average spent 141 rupees per capita on provision of public goods and services.

6 Results

Governance Capacity: We first test if the ISGP intervention increased the governance capacity of the GPs. We do this in two ways. First, we test how the intervention affected the implementation of central government programs by the GPs. The state government has less control over the GP level resource allocation under the central government programs. The implementation of these schemes is, therefore, not subject to the state government's resource allocation strategy. We then look at audit outcomes of the program GPs to infer about change in governance quality after the program came into effect. For the first exercise, we examine the implementation of four schemes, namely NREGS (National Rural Employment Guarantee Scheme), IAY (India Awas Yojna), NRHM (National Rural Health Mission) and BRGF (Backward Region Grant Fund), etc.

Table 2—RDD Results: Effect of ISGP on Program Implementation

	NREGS		IAY	NRHM	BRGF
	Person-days	Job Cards			
	(1)	(2)	(3)	(4)	(5)
ISGP	-0.49	-0.01	13.64*	3.79**	7.07
	(0.51)	(0.01)	(7.94)	(1.54)	(4.98)
Observations	337	495	208	334	364

Notes: The dependent variables for the first two columns are per capita person-days generated (column (1)), per capita job cards issued (column (2)) under the NREGS program for the financial year 2012-'13. The next three dependent variables are per capita expenditures (in Indian rupees) in India Awaas Yojna (column (4)), National Rural Health Mission (column (5)) and Backward Region Grant Fund (column (6)). CCT refers to the MSERD bandwidth proposed by Calonico, Cattaneo, and Titiunik (2014). The control function is polynomial of order one. *** p<0.01, ** p<0.05, * p<0.1

Table 2 reports the RDD estimates of the causal effect of the intervention on these schemes. We look at two measure of NERGS implementation - per capita person-days generated under NREGS (column (1)) and per capita job cards issued (column (2)). For both measures, we find that there is no effect of the ISGP program. The coefficients are very small and negative in magnitude and are not statistically significant. This implies that the program didn't lead to any increase in implementation of the program. Table 2 columns (3)-(5) report the effect on the per capita expenditures under the other three central government programs mentioned above.

We see that for the first two programs, we find a statistically significant positive effect of the ISGP program. The sizes of the coefficients for all the three programs are also large. This suggests that the capacity building program did affect program implementation of the GPs by increasing its capacity to implement the relatively smaller welfare programs. It is possible that the GPs are relatively efficient in its implementation of the NREGS program, given the visibility and political salience of the program, as have been documented in several studies (Gupta and Mukhopadhyay (2016), Das, Mukhopadhyay, and Saroy (2018)). Therefore, the intervention could have had limited possibility to improve the implementation of NREGS to begin with. The smaller programs are potentially more neglected by the GPs. This explains why we observe that these programs experienced improvement due to the intervention.

We next look at outcomes in the audits of the program GPs carried out by the ISGP officials, as described before. One major issue with this outcome is that it is measured only for the set of program GPs after the program was introduced, as the auditors only tracked their performance post intervention. Therefore, we do not have a comparison group for this measure. However, by looking at how the measure changed over time, we may infer about the improvement in governance quality of the program GPs. The audit teams gathered information about four aspects of governance practices of the GPs, namely their planning and budgeting process, project execution and service delivery, accounting and financial reporting, and finally, transparency and citizen engagement through public meetings. On each of the aspects the auditors acquired information about specific outcomes, such as whether annual plans were prepared and uploaded into the system after the relevant committee's meeting and approval, whether procurement contracts meet the necessary criteria etc. Each of these items were scored and aggregated to create an overall governance score. The governance score ranges from 0—100. The first audit happened at the end of 2011-'12, and therefore, captures the governance quality during that financial year. The second audit is relevant for 2012-'13.

Figure 4 plots the densities of the two scores for the program GPs. As we see, the distribution shifts markedly towards the right, indicating that the practices improved significantly for the program GPs over the two years.[30] If we look at

[30]The average score increased from 82 in 2011-'12 to 92 in 2012-'13.

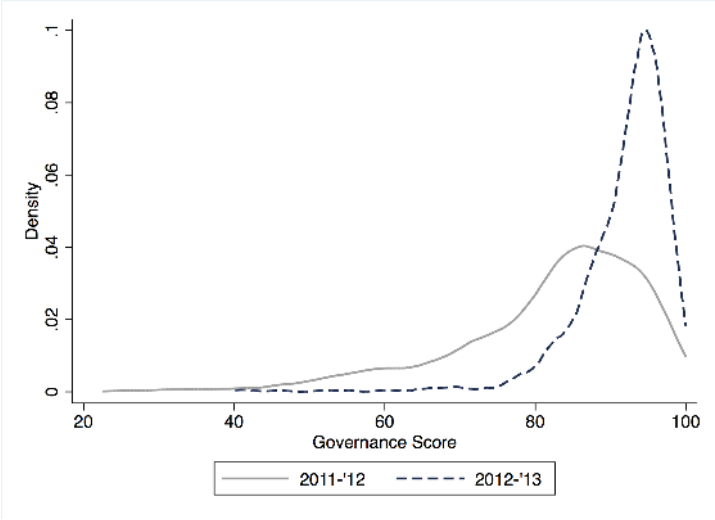


Figure 4. Governance Measure Improved for Program GPs

the "project execution and service delivery" component of the score, while 33% of program GPs received full score in that category in 2011-'12, it went up to 61% in 2012-13.[31] It is certainly possible that the non-program GPs also experienced similar improvement in their governance practices during that time. However, the program officials believed that the audit outcomes revealed real improvement in governance qualities of the program GPs due to the intervention. The audit reports were made available to the government and therefore, the government also had reasons to believe that the IGSP program improved governance quality of the program GPs. As we indicate before, our results would follow as long as the state government perceived the intervention to be effective, even if in reality it had a limited impact on the capacity of the GPs to implement projects.

Resource Allocation to GPs: We now examine the heterogenous effect of the ISGP intervention on per capita total discretionary grants that the GPs receive. As stated before, the discretionary grants primarily include grants from the state government and, for the program GPs, the ISGP grant. We wish to test if the allocation of discretionary grant follows patterns predicted by our theoretical analysis.

Since we have yearly data on resource allocation, we do our analysis for each of the financial years between the 2008 and 2013 GP elections, i.e., from 2008-'09 to

[31] Maximum score for that category, like any of the other three categories, is 25.

2012-'13. Before we formally test Hypothesis 1 using specification (3), we first test whether the ISGP program led to overall increase in per capita discretionary grant. For that purpose we run a specification similar to (3) without the terms identifying heterogeneity, on a sample of GPs within the optimal bandwidth. The specification is given by:

$$R_{gd} = \phi_d + \gamma_1 \mathcal{I}[score_{gd} > 0] + \beta_1 score_{gd} + \beta_2 \mathcal{I}[score_g > 0] * score_g + \epsilon_g \quad (4)$$

This equation above is effectively a RDD estimation. Our coefficient of interest is γ_1. The ISGP program was implemented in 2010. Therefore, we expect no difference in per capita discretionary grant between program and non-program GPs prior to 2010 and a positive difference (owing to the ISGP grant) following 2010. Hence, we hypothesize that $\gamma_1 = 0$ for the years 2008-'09 and 2009-'10 and $\gamma_1 > 0$ for the next three years.

Table 3—Effect of ISGP on Allocation of Discretionary Grant

	2008	2009	2010	2011	2012
	(1)	(2)	(3)	(4)	(5)
			Panel A		
ISGP	-4.842	5.103	17.21***	29.70***	27.86**
	(4.737)	(5.664)	(5.538)	(10.43)	(13.43)
			Panel B		
ISGP	-5.164	5.185	15.82***	21.90*	22.24
	(4.480)	(6.054)	(5.793)	(12.01)	(14.34)
AITC Majority	1.637	-4.497	4.309	1.253	-8.307
	(6.274)	(4.733)	(4.471)	(8.619)	(9.077)
AITC Majority * ISGP	0.828	0.858	4.314	30.13**	24.12*
	(7.231)	(5.768)	(5.912)	(15.29)	(12.43)
Mean Dep. Var.	29.25	44.44	60.38	94.81	127.16
Bandwidth (h^*)	5.51	5.51	5.51	5.51	5.51
Observations	423	423	423	423	423

Notes: The dependent variables are per capita allocation of total discretionary grant (in Indian rupees) for the financial years 2008-'09 to 2012-'13. The years mentioned for each column refer to financial years. 2008, for example, refers to the 2008-'09 financial year and so on. "AITC Majority" is a dummy that takes value one if the majority of council members in a GP belong to AITC party in the baseline. Optimal bandwidth computation for all the columns uses the MSERD method proposed by Calonico, Cattaneo, and Titiunik (2014). Robust standard errors are in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 3 Panel A reports the results which verify this claim. We observe that for the years 2008-'09 and 2009-'10 (columns (1) and (2) respectively), γ_1 is small in magnitude and statistically insignificant. However, for columns (3)-(5), γ_1 has a relatively large and positive magnitude and is statistically significant. In 2010-'11 the program GPs received about 17 rupees per capita, or 28.5% more discretionary grant than non-program GPs. It went up to 30 rupees (31.3%) and 28 rupees (21.9%) per capita in the next two years. Since the program began in the middle of the 2010-'11 financial year, the ISGP grant allocation for that year was lower as compared to the next two years. This explains the lower absolute value of the coefficient estimate for 2010-'11 as compared to the next two years.

We now estimate equation (3) with the same outcome variable. This will allow us to test Hypothesis 1 and will constitute the first evidence in favor of strategic resource allocation by the state government in response to the intervention. Hypothesis 1 predicts that $\gamma_3 > 0$. Since the new party AITC came into power in 2011, we expect the strategic allocation of resources to begin from 2011-'12. Hence, we expect $\gamma_3 > 0$ for 2011-'12 and 2012-'13 and $\gamma_3 = 0$ for the first three years. The results are reported in Panel B of Table 3. We find that γ_3 is small in magnitude and statistically insignificant for the first three years. It jumps to about 30 in 2011-'12 and 24 in 2012-'12 (both are statistically significant). The estimate of γ_1, however, turns positive from 2010-'11 onwards. This shows that even though the program GPs on average received higher discretionary grant from the beginning of the ISGP program, the ones having majority of AITC councilors received even higher grants right after AITC assumed power in the state government. We find that in 2011-'12, for example, the non-aligned program GPs received 21.9 rupees per capita higher than non-aligned non-program GPs. However, the aligned program GPs received 50.77 ($= 21.9 + 30.13 - 1.25$) rupees per capita higher compared to aligned non-program GPs. Importantly, the estimate of γ_2 is small and statistically insignificant in all the years. This implies that aligned non-program GPs didn't receive any differential allocation either before or after the program. It is the *program* GPs with aligned incumbents that gained disproportionately from the intervention *after* the change in power at the state. We therefore verify Hypothesis 1. The evidence strongly indicates that the state government engaged in strategic allocation of resources in response to the intervention.

The results further rule out the case that the allocation is driven by "bottom-

up" factors. For example, if the program GPs become more capable of extracting higher resources from the state government (due to the governance training), then we should not expect differential resource allocation across aligned and non-aligned GPs. Similarly, if aligned GPs have a greater access to the state government, since they share the same political party and hence have smoother communication channels with the government, then we should expect higher allocation to all aligned GPs. However, as we mention above, our results contradict this explanation.

Appendix Section B discusses the effect of the program on expenditure on public services such as water supply, sanitation, public health etc. and finds a consistent pattern. Therefore, the higher allocation to the aligned program GPs did result in higher expenditure on public goods in those GPs.

Party Switching by Incumbents: In this section, we test Hypothesis 2, which tests whether non-aligned incumbents switched parties significantly more if they belonged to the treatment GPs. This is a logical implication of Hypothesis 1. Testing the hypothesis, however, requires us to consider the possibility that politicians may switch their party affiliations. At this point, therefore, some discussion is warranted about the phenomenon of party switching behavior by local politicians.

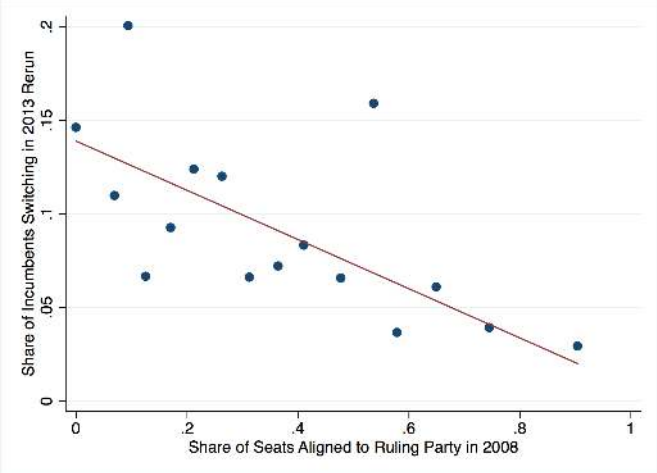
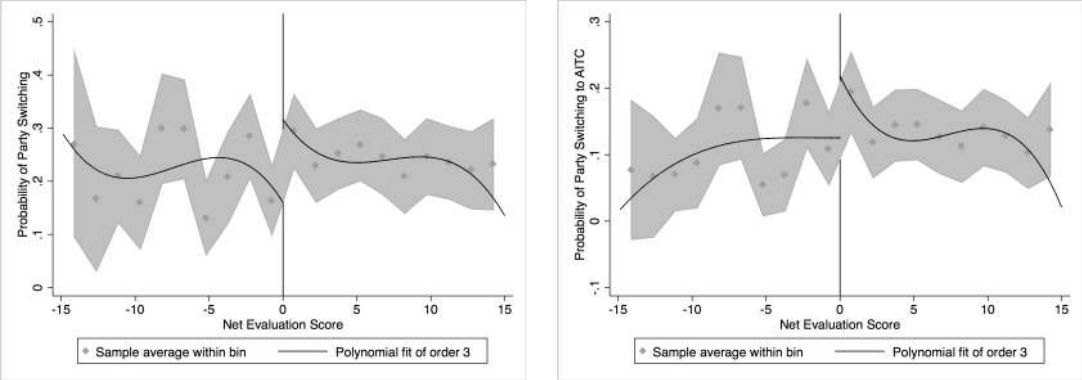


Figure 5. Party Switching in GPs with Low Presence of Ruling Party

As Table 1 Panel B reports, on average about 22% politicians switched parties in the 2013 local election. Therefore, the phenomenon of party-switching is far from uncommon in the villages of West Bengal. Further, we observe that more

than half of the switches were in favor of the ruling party. Another 18% of the switchers became independent candidates, which often implies an implicit shift of allegiance to the ruling party. Moreover, Figure 5 plots in a bin-scatter graph the relationship between the share of incumbents in a GP belonging to the ruling (AITC) party and the share of incumbents switching party affiliation in 2013 election. We observe that most of the party switching behavior is concentrated in GPs where the ruling party had a low presence during the 2008-2013 regime. This is consistent with the fact that the majority of switchers moved to the ruling party.



(a) Party Switching (b) Party Switching to AITC

Figure 6. ISGP Affects Probability of Party Switching by Incumbents

We test Hypothesis 2 by running a standard RDD specification on two outcome variables - (i) one that indicates whether the rerunning incumbent from a GP has switched her party affiliation in 2013, and (ii) one that indicates whether the incumbent has switched her affiliation to AITC party. Figure 6(a) plots the party switching rate as a function of the net evaluation score on either side of the threshold score of zero. We find that the switching rate discontinuously jumps at the threshold, implying that the intervention caused an increase in the party switching rate. We report the RDD estimate in column (1) of Appendix Table A4. The party switching rate jumps at the threshold by 0.26, which is a large effect considering the average of the estimating sample is 0.24. It is also statistically significant at 1% level. In Figure 6(b) we plot the switching rate to the ruling party - AITC against net evaluation score. We observe a similar jump at the threshold. The point estimate of the jump is 0.16, or 64% of the mean of the estimating sample (Appendix Table A4 column (2)). We observe that a large part of the increase in party switching rate is

explained by the switch to AITC party. The result therefore verifies Hypothesis 2.

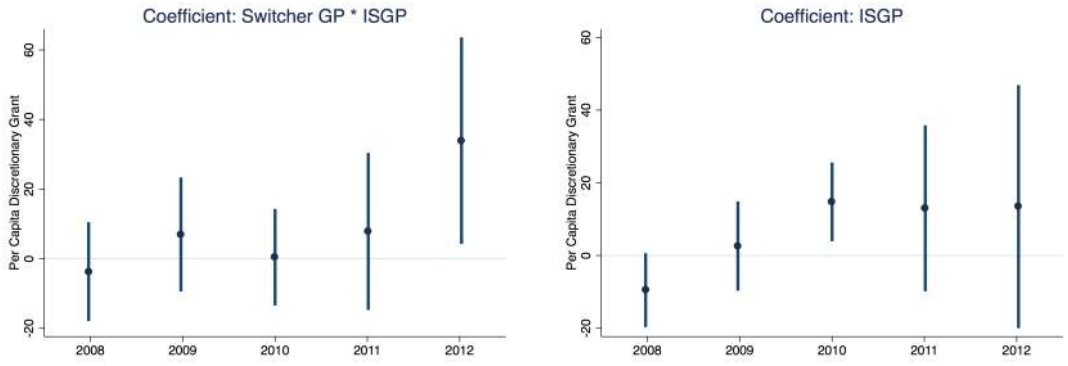
Differential Allocation of Resources to Switcher vs Non-Switcher GPs: In this section we test Hypothesis 3. For this purpose we need to analyze the effect of the intervention on resource allocation to GPs based on whether the incumbents switched their party affiliations or not. However, since elections happen at the ward level and resource allocations happen at the GP level, we bifurcate our sample of GPs into ones where there was at least one incumbent who switched her party affiliation ("Switcher GPs") and the ones where no incumbent switched party affiliation ("Non-switcher GPs"). We then test Hypothesis 3 using a specification similar to (3):

$$\begin{aligned} R_{gd} &= \phi_d + \delta_1 \mathcal{I}[score_{gd} > 0] + \delta_2 S_{gd} + \delta_3 \mathcal{I}[score_{gd} > 0] * S_{gd} \\ &\quad + \beta_1 score_{gd} + \beta_2 \mathcal{I}[score_{gd} > 0] * score_{gd} + \epsilon_{gd}, \end{aligned} \tag{5}$$

where S_{gd} is a dummy variable that takes value one if GP g in district d is a switcher GP and zero otherwise. As before, we restrict our sample to GPs having net evaluation score in the range $[-h^*, h^*]$. Our coefficient of interest is δ_3 which captures the differential allocation to program GPs having switcher incumbents. Now, AITC engaged in strategic resource allocation from 2011-'12 onwards, as Table 3 Panel B results show. If the incumbents from opposition parties decided to switch their party affiliations after observing the differential allocation in 2011-'12, then we expect the switcher GPs to receive higher resource only in 2012-'13, i.e., only the year before the election. Therefore, Hypothesis 3 predicts that $\delta_3 > 0$ only for the year 2012-'13. One potential issue with the specification, however, is that the dummy S_{gd} is endogenously defined. Since the switching probability changes discontinuously at the threshold, the sample of switcher GPs also changes at the threshold. We address this issue by testing equation (5) for all the years between 2008-2013. If the result is driven by the sample selection problem then we should expect a non-zero estimate of δ_3 for years prior to 2012-'13 as well.

Figure 7(a) plots the estimate of δ_3 for each of the years. We report the coefficient estimates in Appendix Table A3 Panel A.[32] We observe that the estimate for the years from 2008-'09 to 2011-'12 are small in magnitude and are statistically

[32]The number of observations in the table is smaller than that in Table 3 since for a subset of GPs we could not assign the switcher GP status as no incumbent from those GPs chose to rerun.



(a) Coefficient: Switcher GP * ISGP

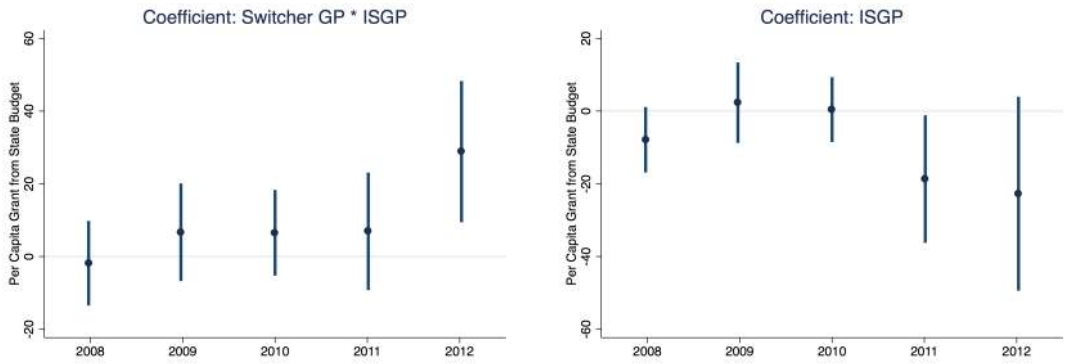
(b) Coefficient: ISGP

Figure 7. Program GPs with Switcher Incumbents Receive Higher Grant

insignificant. However, for the year 2012-'13 it is large and statistically significant. Switcher program GPs received about 30 rupees per capita higher allocation for that year. The result therefore verifies Hypothesis 3. Importantly, since we observe the effect only for 2012-'13, it rules out the possibility that the result is due to different samples of switcher GPs on either side of the threshold net evaluation score. Appendix Table A3 Panel A further shows that the estimate of δ_2 is statistically insignificant for all the years. This implies that the non-program switcher GPs did not receive higher allocation in any of the years. In fact, the coefficient for 2012-'13 is negative. This shows that the state government didn't allocate higher resources to switcher GPs in general, but specifically targeted the ones belonging to the ISGP program. Figure 7(b) plots the estimates of δ_1 (coefficient of the ISGP dummy), which capture additional allocation to non-switcher program GPs. It shows that they began receiving additional grant from 2010-'11 onwards. This is expected given the presence of the ISGP grant from that year onwards. The estimates for the years 2011-'12 and 2012-'13, however, are noisy. We provide an explanation for this in the following discussion.

To better understand the motive of the state government we notice that part of the discretionary grant comes directly from its annual budget. The state government was obliged to allocate the ISGP grant, as part of the intervention, to at least some of the program GPs. However, it had a greater ability to reallocate resources coming from its own budget. Examining this part of the discretionary grant allocation, therefore, may reveal more about the state government's intentions.

With that in mind, we rerun the specification (5) with an alternate outcome variable, namely per capita discretionary grant from state budget.



(a) Coefficient: Switcher GP * ISGP (b) Coefficient: ISGP

Figure 8. Heterogenous Effect of ISGP on Allocation from State Budget

The results are reported in the Appendix Table A3 Panel B. Figures 8(a) and 8(b) plot the coefficient estimates of δ_1 and δ_3 respectively for the 5 years. We find that the estimates of δ_3 follow a similar pattern as observed before. The estimate is small in magnitude and statistically insignificant for the first 4 years and then turns positive and statistically significant in the last year. The estimate of δ_1, however, turns *negative* in 2011-'12 and remains so in the next year. The per capita grant to non-switcher program GPs falls by 18.70 rupees (or, 28%) in 2011-'12 and 22.7 rupees (or, 25.5%) in 2012-'13. This shows that the state government, in fact, *punished* the non-switchers in the program GPs by reducing their resource allocation. This may have motivated the potential switchers to decide to switch in 2012-'13.[33] This result therefore shows that the state government undermined the intervention in a subset of program GPs —the ones where the incumbents didn't switch their party affiliations.

Reelection Rate of Incumbents: Our empirical analysis of GP revenue is motivated by the idea that the state government by being strategic about its resource allocation wished to impact the reelection rates of local politicians. In this section, we therefore test if the ISGP program led to any change in the reelection behavior

[33]The estimate of δ_2 also turns negative in 2012-'13. This implies, as before, that the state government didn't reward all switcher GPs, but targeted the ones belonging to the ISGP program.

of the incumbent politicians. We look at two outcomes - an indicator of rerunning, i.e., whether the incumbent in a ward in a GP has rerun in the 2013 election and an indicator of reelection, i.e., whether the incumbent got reelected in the 2013 election, conditional on rerunning. We run the specification (4) with these two outcome variables to test if the average rerunning and reelection rates were affected by the intervention. We then test for heterogeneity in treatment effect across switcher and non-switcher GPs using specification (5). We cluster the standard errors at the level of GP.

Table 4—Heterogenous Effect of ISGP on Reelection Rates of Incumbents

		Reelection Rate				
	Rerunning Rate	Full Sample		AITC Incumbent	Rival Incumbent	
	(1)	(2)	(3)	(4)	(5)	(6)
ISGP (δ_1)	0.0213	-0.119*	-0.197***	-0.0614	-0.156*	-0.204**
	(0.0236)	(0.0614)	(0.0656)	(0.105)	(0.0847)	(0.0880)
Switcher GP (δ_2)			0.0391			
			(0.0548)			
Switcher GP * ISGP (δ_3)			0.192***			
			(0.0720)			
Incumbent: AITC Switcher (δ_2)						-0.0290
						(0.0897)
Incumbent: AITC Switcher * ISGP (δ_3)						0.163
						(0.110)
$H_0 : \delta_1 + \delta_3 = 0$ (p *value*)			0.94			0.72
Mean Dep. Var.	0.24	0.50	0.50	0.60	0.45	0.45
Observations	3,205	974	974	396	565	565

Notes: The dependent variable in column (1) is an indicator for rerunning in the 2013 election. The dependent variables in rest of the columns is an indicator for the incumbent getting reelected in 2013 election, conditional on rerunning. Columns (2) and (3) have the full sample of rerunning incumbents within the optimal bandwidth. Column (4) has the sample of incumbents belonging to AITC party, while the sample for columns (5) and (6) is the set of incumbents belonging to other parties. "Switcher GP" is a dummy indicating whether any incumbent from the GP switched her party affiliation. "Incumbent: AITC Switcher" is a dummy that takes value one if the incumbent switched her affiliation to the AITC party. Optimal bandwidth estimation uses the MSERD method proposed by Calonico, Cattaneo, and Titiunik (2014). Standard errors are clustered at GP level. *** p<0.01, ** p<0.05, * p<0.1

Table 4 reports the results. Column (1) reports the estimate for probability of rerunning. We find that the intervention didn't have any effect on the rerunning rate of incumbents. The coefficient is small and statistically insignificant. However, conditional on rerunning, we observe that the probability of reelection was *lower* for incumbents in program GPs relative to non-program ones. The probability of reelection falls by 0.12 (or, by about 24%) and the estimate is significant at the 10%

level (column (2)). This is a surprising result considering our previous finding that total discretionary grant was higher among program GPs. To examine further we differentiate between switcher and non-switcher GPs in column (3). We find that the negative effect of the program is completely driven by the non-switcher GPs. Among the set of non-switcher GPs, the intervention resulted in a significant fall (by about 39%) in the reelection rate of the incumbents. This result is consistent with our finding that the discretionary grant from state budget was reduced for the non-switcher program GPs. The estimate for δ_3 is positive and statistically significant in column (3). However, the effect of the intervention on switcher GPs is given by $\delta_1 + \delta_3$, and we can not reject the null hypothesis that it is zero. This implies that for switcher GPs, the intervention didn't have any effect on the reelection rates. This implies that even though the total discretionary grant increased for both switcher and non-switcher program GPs, the voting behavior shows consistency with the allocation of state budget grants. This could be because the state budget grants constitute a large and more regular part of the total discretionary grant. Therefore, a fall in the grant from state budget is more visible to the local voters and therefore, is politically more salient.

Since we know the party identity of individual incumbents, we check whether the overall fall in reelection rate caused by the intervention is driven by AITC incumbents or rival incumbents (i.e., incumbents from opposition parties). Columns (4) and (5) report the results. As expected, we find that the fall in reelection rate is driven by the rival incumbents. Among the AITC incumbents the intervention didn't have any perceptible change in the probability of reelection. On the other hand, it resulted in a decrease in reelection rate by 0.16 for the rival incumbents. Moreover, from column (6) we find that the negative effect of the intervention on rival incumbents is concentrated in those who didn't switch to the ruling party. In fact for the rival incumbents who did switch to AITC, there was no change in their reelection rate due to the program as $\delta_1 + \delta_3$ is statistically indistinguishable from zero. Researchers have argued that reelection motive acts as an important accountability mechanism for politicians, and consequently, lack of reelection motive can negatively affect governance outcomes (Ferraz and Finan (2011), Nath (2014)). Since the overall reelection rate of incumbents in the sample is only 0.08, the fall in reelection rate caused by the ISGP program can be construed as an adverse outcome of the intervention.

7 Conclusion

We examine a World Bank capacity building program implemented in a sample of village governments in the state of West Bengal in India. The intervention was benign in its objective and was well-implemented in a state that otherwise is not heavily reliant on foreign assistance for either resources or expertise on governance. Yet we find that the intervention led to unintended and potentially adverse political economy consequences. We provide evidence that the state government responded to the program in a way that complemented the program by allocating additional resources to program villages with politically aligned incumbents. This discriminatory allocation to aligned program GPs led to a substantial increase in the party-switching behavior of the incumbents from opposition parties in favor of the ruling party. Moreover, the state government reduced its resources to program GPs where the incumbents didn't switch. Consequently, the program resulted in a fall in the reelection rate of the incumbents. Our results highlight the fact that even non-financial interventions in countries such as India may also generate unintended political economy consequences. Therefore, we need to consider such possibilities to have a broader understanding of the welfare effects of such interventions.

It also provides a cautionary tale for advocating third party interventions in developing countries, including countries where such interventions are not politically highly salient. The program that we examine was implemented in collaboration with the state government. Also, the intervention was well designed and effectively implemented; thorough documentation was maintained for every step of the implementation, the training period was intensive, the audits were regular, and the allocation of the ISGP grant to the program GPs was swift. However, in spite of this, we find that the state government reacted to the program driven by its political incentive. Given this, it seems that political economy responses to third party interventions may be widespread. Also, it may not be possible to completely avoid such political responses from domestic governments, since incentives of politicians are shaped by institutional and political context which are often hard to change a priori. However, if we are cognizant of the possibility of such reactions, then we may design future interventions accordingly to guard against potential contingencies.

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Supplementary Appendix

A Appendix Tables

Table A1—Relationship between Net Evaluation Score and NREGS Implementation

	Per Capita Expenditure (1)	Per Capita Person-days (2)
Net Evaluation Score	3.660***	0.0219***
	(0.925)	(0.00542)
Population	-0.0104***	-7.35e-05***
	(0.00171)	(1.00e-05)
Sex Ratio	824.3*	7.399***
	(481.8)	(2.825)
SC/ST Share	192.0***	1.294***
	(65.30)	(0.383)
Literate Share	-0.896	-0.0162*
	(1.444)	(0.00846)
Prop. of Politicians AITC	50.74	0.0671
	(42.95)	(0.252)
District FE	YES	YES
Observations	1,331	1,331
R-squared	0.306	0.342

Notes: The dependent variables are per capita expenditure in NREGS program (in Indian rupees) (column (1)) and per capita person-days generated under the same program (column (2)) for the year 2012-'13. *** p<0.01, ** p<0.05, * p<0.1

Table A2—Village Controls Move Smoothly Across the Discontinuity Threshold

	Area	Population	SC pop.	ST pop.	Sex Ratio	0-4 pop share	Lit. Rate	Council Size	BPL share
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
ISGP	-0.37	-510.05	1047.20	343.50	0.004	1.31	-0.004	1.16	-1.84
	(2.67)	(1483.2)	(1201.90)	(376.87)	(0.004)	(1.67)	(0.019)	(0.79)	(5.50)
Observations	401	399	348	378	500	513	448	474	470

Notes: The observations are at the GP level. The dependent variables are area of GP (column (1)), total population (column (2)), SC (column (3)) and ST (column (4) population, sex ratio (column (5)), share of population with 0-4 age (column (6)), literacy rate (column (7)), number of councilors in GP (column (8)), and share of Below Poverty Line (BPL) households (column (9)). Optimal bandwidth computation for all the columns uses the MSERD method proposed by Calonico, Cattaneo, and Titiunik (2014). The control function is polynomial of order one. Robust standard errors are reported in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table A3—Differential Effect of ISGP across Switcher and Non-switcher GPs

	2008	2009	2010	2011	2012
	(1)	(2)	(3)	(4)	(5)
	Panel A: Total Discretionary Grant				
ISGP	-9.527	2.605	14.76**	13.00	13.45
	(6.165)	(7.442)	(6.566)	(13.84)	(20.26)
Switcher GP	6.247	-1.592	3.141	-7.865	-13.12
	(7.630)	(6.447)	(5.455)	(11.41)	(13.92)
Switcher GP * ISGP	-3.716	6.967	0.424	7.815	33.91*
	(8.615)	(9.931)	(8.415)	(13.69)	(18.00)
Mean Dep. Var.	29.52	44.51	60.65	94.93	130.59
	Panel B: Grant from State Budget				
ISGP	-7.886	2.301	0.407	-18.70*	-22.72
	(5.459)	(6.708)	(5.414)	(10.63)	(16.18)
Switcher GP	3.731	-3.619	-0.804	-8.737	-21.82**
	(6.055)	(5.063)	(5.031)	(7.666)	(10.35)
Switcher GP * ISGP	-1.841	6.669	6.529	6.914	28.86**
	(7.054)	(8.141)	(7.148)	(9.802)	(11.79)
Mean Dep. Var.	29.33	43.99	51.74	66.54	89.09
Bandwidth (h^*)	5.51	5.51	5.51	5.51	5.51
Observations	366	366	366	366	366

Notes: The dependent variables for Panel A are per capita total discretionary grant for the financial years 2008-'09 to 2012-'13. The ones for Panel B are per capita discretionary grant from the state government budget. The years mentioned for each column refer to financial years. 2008, for example, refers to the 2008–'09 financial year and so on. Optimal bandwidth computation for all the columns uses the MSERD method proposed by Calonico, Cattaneo, and Titiunik (2014). The control function is polynomial of order one. Robust standard errors are in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table A4—Effect of ISGP on Party Switching Behavior of Politicians

	Party Switch (1)	AITC Switch (2)
ISGP	0.26***	0.16**
	(0.09)	(0.07)
Mean Dep. Var.	0.24	0.25
Bandwidth (h^*)	3.46	3.80
Observations	672	722

Notes: Both the dependent variables are dummies in this table. For column (1) it is an indicator for the incumbent switching party affiliation conditional on rerunning and for column (2) an indicator for the incumbent switching to the AITC party. Sample including all rerunning incumbents. Optimal bandwidth computation for all the columns uses the MSERD method proposed by Calonico, Cattaneo, and Titiunik (2014). The control function is polynomial of order one. Standard errors are clustered at GP level. *** p<0.01, ** p<0.05, * p<0.1

B ISGP Program and Public Goods Provision

In this section we examine the heterogenous effect of the ISGP program on expenditure on civic services by the GPs. The services include water supply, sanitation services, public health, street lighting, and solid waste disposal. These constitute a significant part of the activities of GP politicians.

Table A5—Effect of ISGP on Public Goods Provision

	2008-2012		2008-2009		2010-2012	
	AITC Majority (1)	AITC Minority (2)	AITC Majority (3)	AITC Minority (4)	AITC Majority (5)	AITC Minority (6)
ISGP	43.94**	-11.86	11.87	-2.65	33.08**	-8.80
	(21.67)	(13.93)	(8.45)	(4.84)	(16.53)	(9.32)
Observations	77	282	86	311	78	285

Notes: The dependent variable in all the columns is per capita expenditure on civic services. In columns (1) and (2) the outcome variable is computed for the period 2008-'09 to 2012-'13, in columns (3) and (4) for 2008-'09 and 2009-'10, and in columns (5) and (6), for 2010-'11 to 2012-'13. Majority and Minority AITC refers to the samples of aligned and non-aligned GPs, respectively. Optimal bandwidth computation for all the columns uses the MSERD method proposed by Calonico, Cattaneo, and Titiunik (2014). The control function is polynomial of order one. Robust standard errors are reported in the parentheses.

To test for heterogeneity we perform the RDD on two sets of GPs separately –the sample of GPs with majority if AITC councilors (aligned GPs) and the sample of GPs without (non-aligned GPs). Our first outcome variable is per capita expenditure on civic services during the entire tenure of the GP, i.e., during 2008-'09 to 2012-'13. The results are reported in columns (1) and (2) of Table A5. We find that the per capita expenditure jumped discontinuously by 44.94 for the sample of aligned GPs and the coefficient is statistically significant at 5% level. However, for the sample of non-aligned GPs, the coefficient estimate is -11.86, though it is not statistically significant. The result is consistent with our finding that the aligned program GPs received greater allocation of resources than non-aligned program GPs. We further test if the increase in allocation is concentrated during the later part of the tenure when the ISGP program was in place. For this we compute the per

capita expenditure for the pre-ISGP period (i.e., 2008-'09 and 2009-'10) and post-ISGP period (i.e., 2010-'11 to 2012-'13). We find that the increase in expenditure in aligned program GPs is only during the post-ISGP period. This further confirms our hypothesis.