Which Wheel Gets the Grease?
Constituent Agency and Sub-national World Bank Aid Allocation

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Abstract: Questions of aid allocation have long focused on discerning the motivation of development donors. Less attention has been paid to the interests and agency of recipient state governments and even less to the interests and agency of constituencies within those states. An implicit assumption is often that the "poor" either passively receive the patronage of their benefactors or they don't. In this paper, we instead suggest that depending on the motivation of a donor, their sensitivity to needy subnational constituencies in aid allocation also depends on the *political empowerment* of those groups. In particular, we take advantage of the unique socio-cultural structure in India to examine if the political agency of scheduled castes and tribes (SC/STs) can explain patterns of district-level allocation of World Bank education aid. Using district-level data on a multi-year World Bank education program, district-level proportions of SC/ST population and of members of parliament we identify poor, but empowered, constituencies. We find that SC/ST districts receive more aid, even when controlling for baseline poverty and educational performance, but that these results are strongest when these districts are politically empowered. Our findings suggest that while donors may indeed respond to recipient needs, those recipients who also speak loudly for themselves fare better, highlighting the importance of constituent agency.

1. Introduction

How and why foreign aid is allocated has been the subject of a vast literature spanning decades of research. The historical distinctions have been between "recipients' needs", "recipients' merit", and "donors' interests" with a focus on understanding differences in cross-national allocation patterns.[1] Recent work has seen more nuanced theoretical development,[2] but also a move to understanding sub-national allocation patterns.[3] However, this work has still produced inconsistent findings, with some scholars finding pro-poor focus in allocation and others not. However, this literature has almost exclusively focused on the *supply* side of foreign aid allocation – the motivations, tactics or methods of donors and/or their governmental or non-governmental agents. Less attention has been paid to the *demand* side of foreign aid allocation – if, how and why the ultimate aid beneficiaries are able to effectively influence their own aid allocation.

This paper proposes that if donors are sufficiently pro-poor in their motivations, they will allocate aid to needy constituencies, especially when those constituencies are politically empowered. Politically empowered development constituencies can serve to crystalize demand and reduce search costs but can also deliver both input and output legitimacy to donors. Additionally, they can credibly challenge donors with an *ex post* reputational cost of neglecting the constituency. Vocal constituencies who are not served by aid distributions can make the "failings" of donor institutions known to their stakeholders and broader publics.

To examine these dynamics, we focus on the allocation of the World Bank's District Primary Education Project (DPEP) in India from 1994 to 2001. Due to its organizational structure of multiple and collective principals, scholars have long argued that international organizations (IOs) may have sufficient "independence" or "agency slack" that can render

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[1] McKinlay and Little 1978.
[2] Bermeo 2017.
[3] Briggs 2014, 2017; Jablonski 2014; Nunnenkamp, Öhler and Andrés 2017.

space for pro-poor behavior.[4] This makes the World Bank a useful donor for examining our theoretical propositions. Likewise, focusing on India allows us to avail of the country's salient socio-cultural class structure and officially designated scheduled castes and schedules tribes (SC/STs). These societal distinctions enable us to introduce a crucial distinction into our analyses by letting us separate political constituencies within the broader and more general "poor". Moreover, as the country with largest absolute numbers of impoverished citizens in the world, India is also the largest recipient of aid from the World Bank and the distribution of that aid has varied widely across India's expansive geography, allowing for reasonable identification of subnational allocation patterns.

Our focus on the education sector also yields benefits for our analysis. As education aid is unlikely to have any immediate geo-strategic or economic payoff, it is a *most likely* sector for allocation that is not self-interested for the donor, especially to the extent that universal education has been billed as a human right.[5] The safeguarding of the education rights of minorities is not only associated with human capacity and freedom,[6] but also promoted as an efficient way to eliminate poverty.[7] Likewise, unlike economic infrastructure or, indeed, even commercial ventures, there are few, if any, *a priori* constraints on the geographic allocation of education aid. Most pragmatically, we are able to identify allocation of the DPEP project at the *district* level, providing sufficient variation for our analysis. These features allow for an focused analysis of the relationship we propose.

In the following sections, the paper first develops a theoretical framework of sub-national aid allocation that depends on the motivation of the donor actor, the interests of recipient governments, *and* the political empowerment of the (potential) recipient constituencies. The paper then briefly outlines India's education sector development and the

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[4] Abbott and Snidal 1998; Nielson and Tierney 2003.
[5] Nussbaum 2011, 20; United Nations 1998.
[6] Sen 1999, 17.
[7] Cremin and Nakabugo 2012.

World Bank's role therein before turning to an analysis of World Bank education programs across 593 districts which considers measures of district-level poverty, the proportion of scheduled caste/scheduled tribe (SC/ST) population and the SC/ST status of members of parliament. The analysis finds that districts with increased SC populations *do* receive more World Bank education aid beyond that expected to generally "poor" districts, but that that the allocation is magnified substantially when a district also had a SC/ST member of parliament in *government*. We then conclude with broader thoughts about the importance of incorporating recipient constituency agency when considering allocation patterns of development assistance.

2. Constituency Agency and Subnational Aid Allocation: Theoretical Foundations

When discussing determinants of aid allocation from donors, scholars normally concentrate on two concepts, motivation and strategy. The debate on motivation seeks to disentangle the balance of egoism and altruism in aid allocation.[8] Discussions on allocation strategy consider what delivery tactics donors can use to efficiently promote aid allocation in recipients.[9] Beyond this, the vast bulk of the aid allocation literature has focused on country-level decision making. This literature focuses almost exclusively on *supply-side* motivations, recipient countries' needs and/or strategic importance are taken as self-evident to potential donors. The few exceptions consider demands and/or interactions with recipient state governments – who are largely presented as unitary actors.[10]

Only recently has scholarship turned to examining subnational aid allocation patterns. These studies have concentrated on if aid goes to poorer and more vulnerable places,[11] regions

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[8] Berthélemy 2006; Younas 2008; Claessens, Cassimon and Campenhout 2009; Hoeffler and Outram 2011; Brazys 2013; Rahman and Giessen 2017.
[9] Dietrich 2013; Carter 2014; Dietrich and Wright 2015; Bermeo 2017.
[10] Swedlund, 2017a; 2017b.
[11] Barrett 2015; Briggs 2017.

with unique political preferences,[12] political violence,[13] places with greater infrastructure where foreign direct investors can benefit more or places where recipients have good implementation ability.[14] Notably, Briggs finds no evidence that the World Bank or African Development Bank target their aid to the poorest regions of recipient countries.[15] Briggs' theoretical discussion rests largely on issues of aid bargaining and donor control, suggesting that if aid *doesn't* flow to the poorest regions this is evidence that donors have lost control to recipient's domestic political economy considerations.[16] Similarly, Nunnemkamp et al. explore the allocation of World Bank projects in India, disaggregating their analysis by sector. In addition to considering sub-national need, they also entertain the "merit" of sub-national administration.[17] Like Briggs they consider how local political economy may influence patterns of sub-national allocation.[18] While Nunnemkamp et al. find little overall evidence of needs-based allocation, they do find evidence of sector-specific targeting, specifically in the health, water/sanitation and transportation sectors.[19] However, these studies, like the country-level literature above, still focus largely on supply-side dynamics. To the extent recipient political economy is considered, it is as an *either/or* – donors either have control or they lose it to the black box of local political considerations. In contrast, Swedlund presents a more nuanced idea that the aid allocation and delivery processes represent a carefully choreographed "development dance".[20] Rather than an all-or nothing logic, Swedlund's work is suggestive that subnational allocation outcomes are ultimately the result of a compromise donor and

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[12] Briggs 2014; Albertus 2015.
[13] Bezerra and Braithwaite 2016.
[14] Reinhardt 2006; Nunnenkamp, Öhler and Andrés 2016; Marty, Dolan, Leu and Runfola 2016.
[15] Briggs 2017.
[16] Briggs 2014; Jablonski 2014; Abdulai and Hulme 2015.
[17] Nunnenkamp, Öhler and Andrés 2016.
[18] Briggs 2017.
[19] Nunnenkamp, Öhler and Andrés 2017.
[20] Swedlund 2017a.

recipient interests.[21] Yet even here, Swendlund focuses primarily on donor interactions with the recipient country *governments*.[22]

We expand upon the insights above by suggesting that the political agency of the targeted constituencies, themselves, can help explain subnational aid allocation. Rather than conceptualizing the "development dance" as a two-partner engagement, sub-national aid allocation is likely to depend on three-way dynamics between the donor, the recipient government, and the targeted constituencies whose interests may or may not be adequately represented in government. Indeed, subnational constituencies most in need are likely those that are also marginalized by their society and/or government. Thus, relying on constituent governments to advance the needs of these constituencies is a dicey proposition. Beyond this, there is likely to be heterogeneity even amongst the needy constituencies. In many countries, "the needy" will constitute numerous, diverse, groups and may, indeed, vie amongst themselves for resources. We propose that *when* these constituencies are sufficiently politically empowered,[23] they may advance their own interests vis-à-vis a *pro-poor* donor in two ways.

We first suggest that these constituencies can help their own cause by reducing the *search costs* of the donor. Similar to the "domestic expert" of Fang and Stone's formal treatment of IO decision making, domestic constituencies may have private, or at least asymmetric, information about their own needs.[24] Need-based metrics, such as income/wealth levels, health or education indicators, or equality measures may be difficult and expensive for donors to obtain, especially at a sufficiently localized, subnational, level that facilitates targeting community-based interventions.[25] Empowered constituencies may have private

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[21] Swedlund 2017a.
[22] Swedlund 2017a.
[23] For our purposes political empowerment *may* mean access to formal institutional structures such as key parliamentary or administrative roles but may also simply be constituencies that are well-organized and empowered through non-governmental channels. We will elaborate on this in the empirical section below.
[24] Fang and Stone 2012.
[25] Galasso and Ravallion 2005; Bardhan and Mookherjee 2006.

information and will be strongly incentivized to present their "needs" case and this can reduce the costs for the donor in identifying *whom* to target. Beyond this, even when metrics are available, they may be crude and/or insufficient to determine true need, and empowered constituencies can provide donors with qualitative or narrative evidence of need.

This latter mechanism is closely linked to a second route of influence, empowered constituencies can serve as a *gate keeper* for donor *access* and *input and output legitimacies*. Altruistic donors are at pains to demonstrate to their stakeholders that their efforts do indeed have a "pro-poor" focus.[26] This can often come via endorsement of a needy constituency itself.[27] Politically empowered, vocal and/or visible constituencies give donors both input and output legitimacy via facilitation of access to local engagement and support in the constituency, and recognition and confirmation of the effectiveness of the donor's efforts. Similarly, these groups can threaten *ex post* reputational costs if they are neglected in allocation by naming and shaming donors that have overlooked their needs.[28]

Key to the arguments above is the assumption of a *pro-poor* donor actor. If a donor is unconcerned with addressing needy constituencies, in practice or even in perception, their allocation is unlikely to be swayed by the political empowerment of those constituencies. Sub-national allocation of *egoistic* donors is likely to follow their own interests if those interests have a geographic component, perhaps access to resources or to accompany a subnational geo-strategic objective.[29] Alternatively, egoistic donors without geographic preferences for aid allocation may simply leave it to recipient country governments to decide where to allocate

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[26] Younas, 2008; Arbia and Carbonnier 2016.

[27] For example, in discussing a World Bank coffee project in Papua New Guinea, a local government official proclaimed, "We thank the World Bank … for coming down to the village level to save our coffee gardens." Further information can be found at < http://www.looppng.com/content/villagers-praise-world-bank-and-partners-coffee-rehab-work> Accessed on 10 January 2018.

[28] As an example, a story of a local from the Tanzanian village of Mlanda who passes a barren pump on a 2km walk to retrieve water, despite World Bank promises to improve the water supply. Further information can be found at <https://www.pri.org/stories/2014-11-24/world-banks-water-failure-tanzania> Accessed on 11 October 2018.

[29] Lum, Fischer, Gomez-Granger and Leland 2009; Findley, Powell, Strandow and Tanner 2011; Zyck 2012; Bohnke and Zurcher 2013.

aid.[30] Our argument is that it is the combination and relative strength of these three influences - donor motivation, recipient government political economy, and needy constituency empowerment – that can explain subnational aid allocation patterns. That said, when needy constituencies are unempowered, or donor's interests are purely egoistic, the dance reverts to two players.

2.1 Subnational Allocation of World Bank Education Aid in India: Follow the Caste

In order to evaluate our theoretical claims, we examine the case of World Bank education aid allocation in India. The donor, recipient and sectoral foci allow us to more precisely test the mechanisms we've outlined above. Focusing on the World Bank, as a *multilateral* donor actor, allows us to proceed with a reasonable assumption of donor pro-poor motivation, from both a theoretical and empirical perspective. Multilateral aid allocation has been found to be explained by geographical distance, human development needs, favoritism, human rights conditions, recipient government quality, recipient governments' demand and core competency areas.[31] Bilateral and multilateral donors have been differentiated based on the principal-agent considerations the latter.[32] While strands of this literature focus on why bilateral donors might delegate foreign aid allocation to multilateral donors,[33] other work more explicitly examines the "agency slack" that is opened to multilateral donors given the multiple and collective nature of their government principals.[34] Indeed, recent work has found that World Bank projects are subject to informal influence through the project cycle.[35] While some argue that multilateral donors are captured by their powerful principals, Copelovitch presents a theoretical argument

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[30] Dreher, Langlotz and Marchesi 2017.
[31] Alesina and Dollar 2000; Eric 2003; Neumayer 2003; Zhang 2004; Winters 2010; Humphrey and Michaelowa 2013; Öhler and Nunnenkamp 2014; Stubbs, Kentikelenis and King 2015.
[32] Martens 2000; Milner 2006; Winters 2010; Eichenauer and Hug 2018.
[33] Schneider and Tobin 2013; Milner and Tingley 2013; Eichenauer and Reinsberg 2017.
[34] Martens 2005; Eichenauer and Hug 2018.
[35] Malik and Stone 2015.

and empirical evidence that multilateral donors *both* fall under the control of their powerful principals but also have areas of agency slack, depending on conditions.[36] Despite these nuances, it is conventionally held that multilateral donors are *more likely* to be pro-poor in their decision making.[37]

From a recipient standpoint, focusing on India allows us to utilize the unique and persistent social structures of that country in determining and differentiating needy constituencies. The prevailing cause of social inequality in Indian society is caste identity. The caste system entails a division of labor, wherein Brahmin is the priestly class, Kshatriya is the military class, Vaishya is the merchant class and Shudra comprises artisans and menial workers. Outside this system falls "Dalits" and indigenous inhabitants.[38] The caste system is a self-enclosed unit which assigns people in society by virtue of birth rather than training and occupation.[39] As a product of the historical encounter between Indian and colonial rule, this system not only lowers market efficiency and individual mobility, but also solidifies conditions of inequality in many aspects. Indeed, 45.9% of scheduled tribes and 26.6% of scheduled castes are in the lowest wealth bracket.[40] Yet SC/ST is not directly synonymous with wealth, and as such the classifications allows us to identify and compare empowered and non-empowered needy constituencies within the more general "poor".

Finally, examining education aid enables us to focus on a distinctly "pro-poor" sector.[41] Unlike other development sectors, there is a decent consensus that education aid "works" at least when considering *quantity* metrics like enrollment or repetition rates.[42] While there is some evidence that in recent years education aid has become more entwined donor geo-

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[36] Fleck and Kilby 2006; Dreher and Jensen 2007; Dreher, Sturm and Vreeland 2009; Copelovitch 2006.
[37] Thiele, Nunnenkamp and Dreher 2007; Clist, Isopi and Morrisey 2012.
[38] Pellissery, Pampackal and Bopaiah 2015.
[39] Ambedkar 2014, 30.
[40] Government of India 2018.
[41] Thiele, Nunnenkamp and Dreher 2007.
[42] D'Aiglepierre and Wagner 2013.

strategic interests,[43] it remains a sector that is less likely to be driven by donors' egoistic interests, especially given that payoffs from investment in education take years if not decades to materialize. Accordingly, focusing on World Bank education aid in India gives us a *most likely* case for observing the impact of empowered needy constituencies on patterns of aid allocation.

2.2 Caste, Education and the World Bank in India

Substantial work has examined the impact of the caste system on access to education and education development.[44] This scholarship indicates that the caste system causes durable inequality in education and different levels of educational achievement, employment outcomes and access to economic resources.[45] These results are often amplified by gender as women in lower castes have even more limited access to education and employment.[46] Exclusion in education is also closely associated with broader social exclusion.[47] These inequalities persist despite provisions in the Indian Constitution to explicitly deal with this discrimination. Articles 16 and 17 of the Constitution of India guarantee equality of opportunity and abolish the practice of untouchability by emphasizing that:

> No citizens shall, on grounds only of religion, race, caste, sex, descent, place of birth, residence or any of them, be ineligible for, or discriminated against in respect of, any employment or office under the State.[48]

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[43] Novelli 2010.
[44] Tilak 1979; Dunn 1993; Borooah and Iyer 2005; Scaria 2014; Halim, Yount and Cunningham 2016.
[45] Filmer and Pritchett 2001; Deshpande and Newman 2007; Borooah 2012; Scaria 2014; Pellissery, Pampackal and Bopaiah 2015.
[46] Dunn 1993; Halim, Kathryn and Solveig 2016.
[47] Hann 1999.
[48] The Government of India 1950.

"Untouchability" is abolished and its practice in any form is forbidden. The enforcement of any disability arising out of "Untouchability" shall be an offence punishable in accordance with law.[49]

Despite these provisions, exclusion in education is still a main ritual marker of lower caste status.[50] A report from the *Social and Rural Research Institute* indicated that, as of 2014, 3.24% of SC children and 4.20% of ST children are still not enrolled in school.[51] Alienation, social exclusion and physical abuse occur from primary education to university and are likely to contribute to low enrollment and high drop-out rates among Dalit children.[52]

The World Bank has a long history of education programs in India, but the subnational allocation of this aid has not been directly studied.[53] Before the 1990s, the school system in India was mainly domestically financed. However, in the early 1990s, a widening gap between public expenditure and revenues required the Government of India to reduce expenditure on education.[54] Following the aid commitments from *the World Conference on Education for All* in 1990, international donors like the World Bank and IMF increased their attention on basic education. Meanwhile, as a result of constitutional reform, school management responsibilities were gradually transferred to local bodies at district, village and block.[55] Guided by the Eighth Plan Document (1992-1997), the development of education became more targeted by a shift in focus from educationally backward states to educationally backward districts.[56] Ensuring "the right to education" has long been a World Bank goal.[57] To protect "the right to education", the

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[49] The Government of India 1950.
[50] The World Bank 2011.
[51] Social and Rural Research Institute 2014.
[52] Borooah and Iyer 2005.
[53] While Nunnenkamp et al. found that the World Bank prefers districts where foreign direct investors may benefit from projects related to infrastructure, they did not explicitly examine the allocation of education aid.
[54] Tilak 2008.
[55] Colclough and De 2010.
[56] Relevant documents about The National Plans from the Government of India can be accessed at < http://planningcommission.nic.in/plans/planrel/index.php?state=planbody.htm>.
[57] Oestreich 2004.

World Bank has emphasized the rights to education in vulnerable groups in society, which includes women, refugees, those subject to involuntary resettlement, as well as indigenous people. Protection of these groups have been built into projects with policy prescriptions.[58] Accordingly, the World Bank has paid strong rhetorical homage to the education rights of minorities when initiating and implementing education projects. In a report titled *Learning to Be* published in 1972 the World Bank argued:

> The universal right to education—in which contemporary civilization takes such premature pride—is often refused, by a complete reversal of justice, to the most underprivileged. They are the first to be denied their right in poor societies, the only once deprived in the rich (Faure et al. 1972).[59]

In the context of India, World Bank documents commonly mention the caste system in arguing that social constructions that are shared with a culture shape how people perceive and understand the world and themselves. The caste system is regarded as a source of concepts, shared community, narratives and worldviews that can give higher-caste individuals access to social insurance, jobs, and dominance over individuals in lower-ranked castes.[60] The World Bank further acknowledges that the caste structure produces significant gaps in performance, with the high castes learning more and working more productively than the low castes.[61] World Bank president Jim Yong Kim noted in addressing the Vibrant Gujarat Summit that caste bias is always a concern of the World Bank and allocation of funds for entrepreneurs from among

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[58] Omprasad 2016.
[59] Faure, Herrera, Kaddoura, Lopes, Petrovsky, Rahnema and Ward 1972.
[60] The World Bank Policy Research Working Paper *Caste System* drafted by Karla Hoff explained this issue. Hoff 2016.
[61] The World Bank Policy Research Working Paper *Making Up People- The Behavioural Effects of Caste* illustrated this topic. Hoff, Pandey 2011.

the scheduled castes should be ethically just and economically sound.[62] Similarly, expanded human development lending in the World Bank's 2004 *Country Strategy for India* was predicated on the continuing substantial disparity of opportunity, particularly in the education, health and economic prospects of women and other vulnerable groups like SC and ST populations. Likewise, the *Scheduled Caste and Scheduled Tribe Development Plan* outlines mitigating measures to solve problems of exclusion in education, including developing soft skill and entrepreneurial modules, managing a data bank on students, promoting outreaching activities for community awareness, training on social inclusion and gender sensitization. Thus, the official rhetoric surrounding the allocation of World Bank education aid in India contains an explicit and continued pro-poor focus, particularly for SC/STs.

However, paying homage to SC/STs in official documents may simply be "cheap talk" that does not necessarily translate in observed patterns of aid allocation.[63] In order to understand if the World Bank's apparent altruism translated to increased SC/ST allocation targeting, we need to understand the interplay between the Bank, the Indian government authorities, and the SC/ST groups themselves. The World Bank's elementary education aid in India is delivered through projects. After investigating relevant documents of the World Bank's elementary projects in India, it is evident that the World Bank signed project agreements with Government of India to propose policy implementation in specific districts.[64] DPEP financing was targeted to districts with female literacy rates below the national average of 39 percentage, as well as to districts where Total Literacy Campaigns have generated substantial enrolment increases in primary education (District Primacy Education Project, 1994).[65] While all funded

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[62] The Times of India 2015.

[63] Dreher, Langlotz and Marchesi 2017.

[64] There were 15 elementary education projects in India from the World Bank from 1991 to 2011. And each project offered series of documents including Memorandum & Recommendation of the President, project agreements, credit agreements, implementation completion and results reports and implementation report reviews. The authors reviewed these documents and found that project agreements are normally singed between the International Development Association and Government of India.

[65] World Bank (1994), District Primary Education Project, available at: http://documents.worldbank.org/curated/en/601621468771640834/pdf/multi0page.pdf accessed 15-02-2019.

districts met one of these criteria, not all districts that met one of these criteria received DPEP funding, nor did funded districts receive necessarily receive equal or proportional amounts of funding.

At the level of implementation, the relationship between the World Bank and Central Government of India is fixed by project agreements, which guarantees information flow and makes monitoring and accountability easier.[66] The implementation agency of the Bank's education projects in India are mainly local governments.[67] Non-governmental actors also sought to influence the nature and implementation of these projects. The International Dalit Solidarity Network (IDSN) recommended governments to take appropriate measures to ensure Dalits' right to equal participation and non-discrimination in education, reporting that belonging to a scheduled cates or tribe lowers prospects of school attendance.[68]

Given the discussion above, we develop two expectations about pattern of World Bank education aid allocation in India. First, given the explicit focus of both the World Bank and the Indian government on SC/STs we expect increased allocation to those areas with high proportions of these *marginalized poor* above and beyond targeting toward the general "poor". Second, given the mechanism of reducing search costs and increasing input and output legitimacy, we expect this effect to be amplified in locations where the SC/ST is *politically empowered*.

3. Data and Methods

To examine our *marginalized poor* and *political empowerment* hypotheses, we apply cross-sectional data covering 593 districts from 29 states and seven Union Territories in India (Appendix 1) for the 2001 period. We use the World Bank Geocoded Aid Data v1.4.2 from

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[66] Radelet 2006.

[67] We explored the World Bank education projects documents in India from 1992 through 2014 to find that implementation agencies in these projects were all state governments of India.

[68] IDSN 2010.

AidData and Census of India 2001 handbook sourced from the Ministry of Home Affairs, Government of India, that provide data on social and economic indicators at the district level. We formulate cross-sectional data by matching these two datasets and then add additional control variables sourced from the Reserve Bank of India. Since some of the data are not available for all districts and for all years, our dataset is unbalanced. We thus estimate:

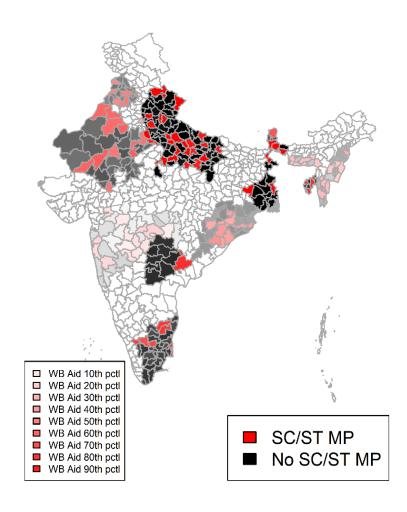$$\ln{(WB)}_{di} = \beta_1 SC\,MP_{di} + \beta_2 SC_{di} + \beta_3 SC\,census_{di} + \beta_4 \phi_{di} + \varepsilon_{di} \quad (1)$$

$$\ln{(WB)}_{di} = \beta_1 ST\,MP_{di} + \beta_2 ST_{di} + \beta_3 ST\,census_{di} + \beta_4 \phi_{di} + \varepsilon_{di} \quad (2)$$

where in equation (1) and (2), $\ln{(WB)}_{di}$ is the outcome variable of interest, ϕ_i are the control variables (discussed below) and ε_{di} is error term. The term $\ln{(WB)}_{di}$ measures the World Bank elementary education aid in district d, state i. To control for skewness, we log the World Bank education aid variable. The base data is sourced from the World Bank Geocoded Aid Data v1.4.2 available with the AidData.[69] We focus on one broad education initiative from the World Bank, the District Primary Education Project (DPEP) which was disbursed in seven different project waves from 1994 to 2001. Note that DPEP data is available at the project-level and doesn't vary by year and hence our data is cross-sectional. While the AidData database has information on these waves, the geographic precision for many of these projects is only at the state level. However, Azam and Saing identify which districts within states have received DPEP and we combine that with the AidData project records to create a measure of district-level aid.[70] In total, 268 districts received at least one wave of DPEP financing in amounts ranging from roughly US$3 million to US$10 million. While it would be of interest

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[69] AidData 2017.
[70] Azam and Saing 2016.

to test our hypothesis with other types of aid, functionally, this is the only large-scale project that we could reliably identify at the *district* level. We estimate OLS estimation specification which include Huber-White corrected robust standard errors, a method which is robust to heteroskedasticity and serial correlation.[71]

Map 1: World Bank Educational Aid and SC/ST MPs

There are three key variables in equation (1) and (2) which merit discussion. First is the SC and the ST population shares in district d, state i at year t respectively. The data for both SC and ST population and total population for each district is sourced from the government of India census handbooks. Second, is the SC and ST MPs which is a count of number of elected MPs from SC and ST reserved constituencies and 0 for non-reserved constituencies. The

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[71] Wiggins 1999.

challenge we encounter in compiling this data is that the electoral constituencies in India do not overlap with administrative districts' boundaries in the states, a problem also faced by other studies in the literature.[72] We make use of the documents available at the Election Commission of India that provide information about the boundaries of administrative districts and electoral constituencies in each state which was in turn used to match the individual constituencies reserved for SCs and STs to the administrative districts. The geographic distribution of World Bank educational aid and SC/ST MPs are shown in Map 1 below.

Third, as seen in equation (1) and (2) we also include SC and ST population share from past census (of 1971) for district d, state i. The main reason for including SC and ST population shares from 1971 is that without them estimating equations (1) and (2) could have an endogeneity problem. It is quite unlikely that our key explanatory variables – SC and ST population shares – are endogenous to World bank aid allocation. In other words, SC and ST population shares are unlikely to be a result of aid allocation decisions of the Bank. An important concern, though, remains. If the World Bank aid allocation in Indian districts is a function of SC and ST population then it is also correlated with Parliamentary seats reserved for SC and ST candidates.

This correlation is due to the fact that a 'policy rule' reserves parliamentary seats for SC and ST candidates on the basis of population share.[73] This rule is one of several affirmative action policies enshrined in the Indian Constitution to improve the wellbeing of the SC and ST populations. Once reserved, only members from SC and ST communities, irrespective of

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[72] Aidt and Franck 2015; Vadlamannati 2011; Vadlamannati 2016; Gehring, Kauffeldt and Vadlamannati 2018.
[73] The Registrar of India conducts a census in each state to count the population numbers. The census exercise is undertaken once in every 10 years. These census numbers are then submitted to the central government which then appoints a "Delimitation Commission", which is a national committee comprising of chief national election commissioner, judges from state High court and Supreme court. The Delimitation Commission is appointed after the arrival of new census which will then determine how many Parliamentary seats are to be reserved for SC and ST candidates based on new census numbers. Depending upon changes in SC and ST population numbers in each state the specific constituencies reserved for SCs and STs are revised. Notice that though district-level SC and ST population shares are used by the government to reserve constituencies for SCs and STs but geographic districts and electoral constituencies in India do not overlap.

political parties, should contest elections from those reserved seats.[74] Voters from all other castes (social/ethnic groups) get to vote in those reserved constituencies. To get around this endogeneity we take advantage of the fact that there is often a substantial time lag in implementation of this 'policy rule'.[75] This is due to the multiple institutional steps involved in the rule. First, there is a passage of time between the release of new census data and the establishment of the Delimitation Commission which apportions seats. Second the Delimitation Commission then takes several years to arrive at new reservation quotas for SCs and STs in each state based on the new census numbers. Finally, the state itself could take several more years (after deliberations and consultations in the Parliament and respective state legislative assemblies) to implement the new revised constituencies.

Beyond this general institutional lag, a constitutional amendment in 1976 suspended the Delimitation Commission until the year 2000.[76] This effectively means that the SC and ST Parliamentary seats for the elections from 1978 to 2008[77] were reserved based on the SC and ST population census numbers of 1971. In 2002, the government of India, through the Delimitation Commission Act of 2002, set up a new commission to adjust the territorial boundaries of the electoral constituencies and the reservations of SC and ST seats on the basis of 2001 census numbers.[78] As a result, the number of seats reserved for SCs in lower house of the Parliament jumped from 78 to 84 and for STs the reserved seats increased from 41 to 47.

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[74] There is very little evidence to suggest that SC and ST candidates contest non-SC and ST electoral constituencies, i.e., those seats which are not reserved for SCs and STs.
[75] Chinn and Prakash 2011.
[76] An important aspect of this suspension was that the number of Parliamentary constituencies and seats in the state legislative assemblies were frozen until the year 2000.
[77] The Delimitation Commission of 1971 submitted its report which was implemented from 1978 onwards. Therefore, the reserved SC and ST seats for all the national and state elections from 1978 onwards were based on the 1971 census numbers.
[78] It is noteworthy that the new Delimitation Act of 2002 extended the freeze of number of Parliamentary constituencies and seats in the state legislative assemblies until the year 2026 but allowed for adjustment of SC and ST constituencies in line with the changes in their respective population numbers in districts on the basis of 2001 census.
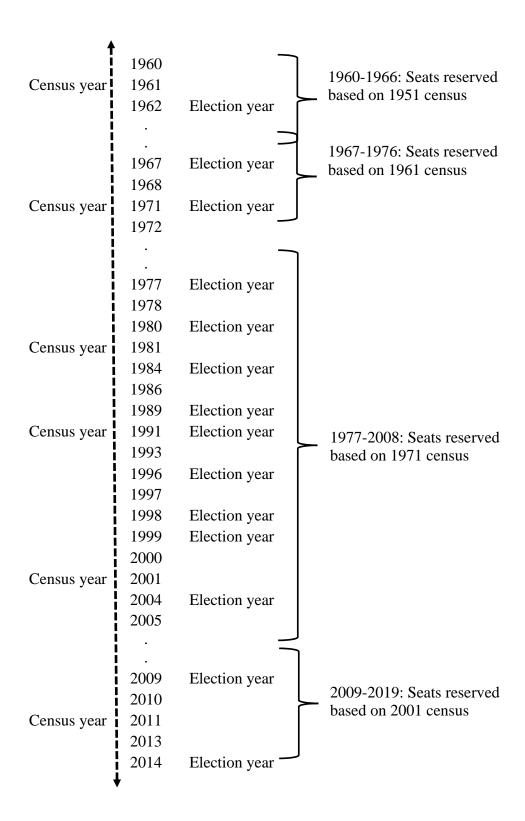
Exhibit 1 displays how the 'policy rule' works. As seen, the SC and ST seat shares in each state for 1968, 1972 and 1976 elections were based on 1961 census numbers, while the seats for the same in 1980 to 2004 elections were reserved based on 1971 census numbers. Because of this time lag, we need to control for SC and ST population shares in each district from the 1971 census for period 2001 based on which the changes to the reserved seats was determined by the Commission.[79] As population changes every year, we expect that the current SC and ST population share, which is our main variable of interest, will be different from both the SC and ST population share measured in the past census (of 1971) and the districts which are reserved seats for SC and ST candidates. This strategy allows us to identify the causal effects coming from elected SC and ST MPs and not merely from the current SC and ST population share and still control for the past census numbers.

Next, we further operationalize our political empowerment hypothesis by considering the differential effect of SC and ST MPs when they are *in government*. In order to do this, we estimate a model in line with Khemani.[80]

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[79] This is similar to the strategy adopted by Pande (2003), Chinn and Prakash (2011) and Howard and Prakash (2012).

[80] Khemani 2007.

Exhibit 1: 'Policy Rule' of reservations of SC and ST Parliamentary seats in India

Census year	1960	
	1961	
	1962	Election year
	.	
	.	
	1967	Election year
	1968	
Census year	1971	Election year
	1972	
	.	
	.	
	1977	Election year
	1978	
	1980	Election year
Census year	1981	
	1984	Election year
	1986	
	1989	Election year
Census year	1991	Election year
	1993	
	1996	Election year
	1997	
	1998	Election year
	1999	Election year
	2000	
Census year	2001	
	2004	Election year
	2005	
	.	
	.	
	2009	Election year
	2010	
Census year	2011	
	2013	
	2014	Election year

1960-1966: Seats reserved based on 1951 census

1967-1976: Seats reserved based on 1961 census

1977-2008: Seats reserved based on 1971 census

2009-2019: Seats reserved based on 2001 census

$$\ln(WB)_{di} = \beta_1(SC\ MPs\ \times Affiliation)_{di} + \beta_2(SC\ MPs\ \times [1 - Affiliation])_{di}$$
$$+ \beta_3\ Affiliation_{di} + \beta_4\phi_{di} + \varepsilon_{di}\ \ (3)$$

$$\ln(WB)_{di} = \beta_1(ST\ MPs\ \times Affiliation)_{di} + \beta_2(ST\ MPs\ \times [1 - Affiliation])_{di}$$
$$+ \beta_3\ Affiliation_{di} + \beta_4\phi_{di} + \varepsilon_{di}\ \ (4)$$

wherein, **Affiliation**$_{di}$ is an indicator of political affiliation that equals 1 when the political

affiliation of SC and ST MPs from district *d* belongs to the same party as that governing at the

center, and 0 otherwise. Note that we control for current (2001) and past (based on 1971 census)

population share of SCs and STs in equation (3) and (4) respectively. If political empowerment

stems from SC and ST MPs being politically aligned with the central government, we could

have **β₁ > 0** and **β₂ < 0** from both equation (3) and (4). Conversely, if partisan identity of the

SC and ST MPs does not matter for the ruling party in center, then **β₁** would be

indistinguishable from 0. Once again, we employ OLS estimator controlling for Huber-White

corrected robust standard errors.

Finally, the vector ϕ_i includes control variables at the Indian district-level which are

gleaned from the existing literature on aid allocation at Subnational level.[81] In selecting the

controls, we try to avoid the "garbage can" approach and limit our control variables.[82] We

follow the conservative strategy of accounting only for known factors that may confound the

effect of SC and ST population share, such as level of income, spending on education and the

current level of literacy. We include district-wise total population (log) as larger districts might

need more resources to obtain visible effects of aid provision.[83] We also control for state

capacity by including two measures. First, in the absence of data on government spending on

education at district level, we include each state government's total expenditure (log) at the

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[81] Dreher, Nunnenkamp and Thiele 2008; Nunnenkamp, Öhler and Andrés 2016; Briggs 2017.
[82] Achen 2005.
[83] Roberts 2003; Nunnenkamp, Öhler and Andrés 2016.

state-level which varies by year in a state but not by district within each state. Second, following Gupta et al.,[84] we include state government's expenditure on primary education (log) at the state-level which again varies by year in a state but not by district within each state. Likewise, to measure the remoteness of each district vis-a`-vis the district headquarters (i.e., capital of the state), we compute the distance from each district in a state to the capital of that particular state measured in kilometres (log). [85]

In considering general district-level need, we consider three proxies. First, we expect the World Bank to provide more education aid to districts with a larger rural population share where poverty is high and educational infrastructure is limited. This variable serves as one of our proxies for general recipient need.[86] Next, we expect districts with lower levels of literacy to attract more educational aid from the World Bank, serving as a measure of educational need. Following others,[87] we include male and female literacy rate drawn from the Government of India's Census handbooks. Finally, we use night-time lights as a proxy for the economic development of the districts. Unfortunately, there are no official GDP or per capita GDP estimates available at the district level in India, so we rely on night light satellite images. Henderson et al. show how to calculate night-time lights data and show that it is correlated with official GDP growth data.[88] Likewise, both Chaturvedi and Gehring et al. have used night-time lights data as a proxy for economic development in electoral constituencies in India.[89] These studies emphasize that night light data is the best available objective measure of economic development in countries where official data on GDP is not always available. We use average visible, stable light on cloud free nights, collected by the F16 satellite for the years 1992, and 2001. We then compute the log sum of lights using zonal statistics within each district to proxy

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[84] Gupta, Verhoeven and Tiongson 1999.
[85] Nunnenkamp, Öhler and Andrés 2016; Vadlamannati 2011.
[86] Dollar and Levine 2006.
[87] Baldacci, Clements, Gupta and Cui 2004 ; Michaelowa and Weber 2006; Dreher, Nunnenkamp and Thiele 2008.
[88] Henderson, Storeygard and Weil 2012.
[89] Chaturvedi 2011; Gehring, Kauffeldt and Valamannati 2018.

for economic development. The descriptive statistics are provided in Appendix 2 and details on data definitions and sources in Appendix 3.

4. Empirical Results

Table 1 reports the impact of SC and ST population shares on World Bank educational aid allocation. While columns 1-2 present the results from a parsimonious model, columns 3-4 present the results of SC and ST population share on World Bank aid allocation controlling for past population shares. As seen from columns 1-2, the SC population share is positive and significantly different from zero at the 1% level. We find no significant effect of ST population share on World Bank aid allocation. But as discussed in previous section, estimates from columns 1-2 may be biased due to an omitted variable bias problem. We therefore control for the past values of SC and ST population shares. In columns 3-4, the effects of SC and ST populations are similar to columns 1-2 after controlling for past census population shares of SCs and STs in the districts. As seen in column 3, the substantive effects suggest that a standard deviation increase in SC population share (8.72) is associated with an increase in World Bank aid allocation by 150%, which is significantly different from zero at the 10% level. ST population share, as shown in column 4, has no significant effect in allocation of World Bank aid in Indian districts. There could be multiple reasons for this finding. One plausible explanation could be that, compared to SC population, majority of the ST population resides in rural, and sometimes remote, areas in Indian districts. Chinn and Prakash show that about 90% of the ST population resides in rural areas while only 2.4% of the ST population live in urban areas.[90] The poverty rate of this community is twice that of SC population which inhabit in urban areas. As such, we might expect that World Bank exerts efforts to reach out to these communities by focusing on rural areas to improve ST well-being.

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[90] Chin and Prakash 2011.

Table 1: World Bank education aid allocation and SC, ST population share

	(1) WB Aid (ln)	(2) WB Aid (ln)	(3) WB Aid (ln)	(4) WB Aid (ln)
SC Population share (Current)	0.206***		0.159*	
	(0.0467)		(0.0940)	
ST Population share (Current)		-0.0199		-0.0348
		(0.0197)		(0.0433)
SC Population share (Past)			0.0573	
			(0.0922)	
ST Population share (Past)				0.0150
				(0.0406)
Population (log)	0.200	0.348	0.159	0.315
	(0.568)	(0.596)	(0.570)	(0.599)
Rural Population share	3.067	5.272	3.418	5.232
	(3.466)	(3.404)	(3.466)	(3.420)
Literacy Rate	-0.171***	-0.170***	-0.167***	-0.171***
	(0.0340)	(0.0351)	(0.0343)	(0.0352)
Elementary Education Expenditure (log)	3.646***	3.526***	3.692***	3.553***
	(1.007)	(0.960)	(1.004)	(0.962)
Government Expenditure (log)	-1.064	-0.578	-1.158	-0.600
	(1.165)	(1.168)	(1.157)	(1.172)
Night Light (log)	-0.194*	-0.152	-0.197*	-0.154
	(0.108)	(0.104)	(0.109)	(0.104)
Distance to State Capital (log)	-0.209	-0.216	-0.221	-0.232
	(0.444)	(0.461)	(0.443)	(0.462)
Constant	-15.92**	-19.51**	-15.55**	-18.93**
	(6.882)	(8.763)	(6.894)	(8.803)
Total Observations	545	545	544	544
Estimator	OLS	OLS	OLS	OLS
Number of States	29	29	29	29
Number of Districts	545	545	544	544
R-squared	0.271	0.248	0.273	0.249

Notes: Robust standard errors in parenthesis; Statistical significance: ***p<0.01, **p<0.05, *p<0.1

However, the reach of the Indian government machinery to some of these rural areas is limited. In a UN survey report, Sujatha points out the difficulties faced by the government administrative apparatus to take some of the government educational schemes to the ST

districts which are in remote parts of the country.[91] Similar such findings are echoed in the work by Nair.[92]

4.1 *Political empowerment effects*

Next, we examine whether the World Bank aid allocation in Indian districts is conditional on the presence of SC and ST MPs, controlling for their population shares. In Table 2, we introduce new variables into our baseline models, i.e., if a district is represented by a SC or ST MP. As seen in columns 1-3, we find positive effects, but these are only statistically significant at the 10% level for ST MPs (columns 2-3), although the substantive effect is large: a district represented by SC MPs is associated with roughly 175% increase in World Bank aid allocation.[93] These findings are in line with Chinn and Prakash, and Pande, who find that at the state-level, political reservations for minority groups, especially STs in India, does have some positive impact in reduction in overall poverty.[94] To further test the political agency hypothesis, we present the results on political affiliation of SC and ST MPs in Table 3. In column 1 and 3 we present the results from parsimonious models of SC and ST MPs political affiliations, respectively, while including control variables in column 2 and 4. In all models in Table 3, SC and ST MP political affiliation with the same political party as the central government leads to significantly higher World Bank aid allocations. For instance, districts represented by SC MPs see an increase in World Bank aid allocation by 814% if they are affiliated to the ruling party in the central government. The effects of affiliated ST MPs are also large, with those districts seeing an increase in World Bank aid allocation of 508%.

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[91] Sujatha 2000.
[92] Nair 2007.
[93] Note that our results remain robust even after sequentially expanding the main explanatory variables i.e., the SC and ST population shares from 1971, followed by the current SC/ST population shares.
[94] Pande 2003; Chinn and Prakash 2011. Of note from Pande (2003) is that areas with SC/ST legislator reservations received less education funding *from the Indian government*. This might suggest that the World Bank program simply filled in for the Indian Government and/or the Indian Government reduced its spending in response to the SC/ST targeting of the World Bank.

Table 2: World Bank education aid allocation and SC, ST MPs

	(1) WB Aid (ln)	(2) WB Aid (ln)	(3) WB Aid (ln)
SC MPs	1.096		1.157
	(0.800)		(0.809)
SC Population share (Current)	0.139		0.161
	(0.0946)		(0.0997)
SC Population share (Past)	0.0536		0.0560
	(0.0914)		(0.0929)
ST MPs		1.751*	1.861*
		(0.971)	(0.947)
ST Population share (Current)		-0.0460	-0.0179
		(0.0421)	(0.0418)
ST Population share (Past)		0.00826	0.0213
		(0.0398)	(0.0388)
Population (log)	0.144	0.124	0.0813
	(0.571)	(0.613)	(0.620)
Rural Population share	3.536	5.017	3.405
	(3.463)	(3.410)	(3.474)
Literacy Rate	-0.169***	-0.171***	-0.164***
	(0.0345)	(0.0351)	(0.0346)
Elementary Education Expenditure (log)	3.652***	3.522***	3.614***
	(0.995)	(0.958)	(0.992)
Government Expenditure (log)	-1.132	-0.574	-0.944
	(1.152)	(1.163)	(1.173)
Night Light (log)	-0.199*	-0.159	-0.197*
	(0.109)	(0.104)	(0.109)
Distance to State Capital (log)	-0.192	-0.311	-0.313
	(0.441)	(0.464)	(0.446)
Constant	-15.19**	-15.47*	-15.80*
	(6.911)	(9.052)	(8.934)
Total Observations	544	544	544
Estimator	OLS	OLS	OLS
Number of States	29	29	29
Number of Districts	544	544	544
R-squared	0.275	0.252	0.281

Notes: Robust standard errors in parenthesis; Statistical significance: ***$p<0.01$, **$p<0.05$, *$p<0.1$

Interestingly, those SC and ST MPs who are not affiliated to the ruling party in the center have no effect on World Bank aid allocation. It is noteworthy that these effects are substantially larger than that of the control variables in the model. This suggests that it is the SC and ST MPs

political relationship with the center that accounts for significant variation in aid allocation of World Bank. Our results give further credence to our political empowerment hypothesis.

With respect to control variables, we do not find population and rural population share to be significant determinants of development aid projects in education sector from the World Bank. However, we do find that night-time light variable, our proxy for economic development in districts, remains negative and is often statistically significant at the 10% level in models shown in Table 1-3. These findings are in line with the findings of Dreher et al.[95] For instance, a standard deviation increase in night-time lights is associated with roughly 126% decrease in World Bank aid allocation. These findings provide some support for the general need-based criteria of the Bank in determining aid allocation in Indian districts. Likewise, we also find that literacy rate in districts is a strong determinant of World Bank aid allocation. These findings are in line with that of Nunnenkamp et al. who find some evidence of needs-based allocation of aid from the Bank in India.[96] These results suggest that allocation based on being politically empowered marginalized constituencies is *above and beyond* targeting that also incorporates both educational need and a measure of more general poverty. Interestingly, we find that total government expenditure has no effect on World Bank aid allocation but spending on education sector does. In fact, the effects are substantially large and is significantly different from zero at the 1% level across the models in Table 1-3. This is expected as World Bank aid would supplement the government's spending on education sector specially in the needy areas.

4.2 *Robustness checks*

We subject our main findings to a number of robustness checks, full tables of which can be found in the supplemental online appendix. First, we examine the determinants of selection of districts by the Bank using a probit estimator.

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[95] Dreher, Nunnenkamp and Thiele 2008.
[96] Nunnenkamp,Öhler and Andrés 2016.

Table 3: Partisanship and World Bank education aid allocation

	(1) WB Aid (ln)	(2) WB Aid (ln)	(3) WB Aid (ln)	(4) WB Aid (ln)
SC MPs **X** Political affiliation	6.817***	8.136***		
	(0.971)	(0.989)		
SC MPs **X** (1 − Political affiliation)	-0.774	-0.701		
	(1.195)	(1.006)		
Political affiliation	-6.102***	-7.158***		
	(2.085)	(1.943)		
SC Population share (Current)	0.159*	0.138		
	(0.0943)	(0.0943)		
SC Population share (Past)	0.175*	0.0745		
	(0.0915)	(0.0904)		
ST MPs **X** Political affiliation			5.994***	5.088***
			(1.713)	(1.382)
ST MPs **X** (1 − Political affiliation)			1.081	0.811
			(1.577)	(1.537)
ST Population share (Current)			-0.0821**	-0.0425
			(0.0400)	(0.0426)
ST Population share (Past)			0.000201	0.00887
			(0.0419)	(0.0403)
Political affiliation			-1.084	-3.861
			(3.246)	(2.904)
Population (log)		0.148		0.129
		(0.576)		(0.611)
Rural Population share		4.341		5.026
		(3.407)		(3.422)
Literacy Rate		-0.167***		-0.169***
		(0.0347)		(0.0354)
Elementary Education Expenditure (log)		3.867***		3.613***
		(0.989)		(0.961)
Government Expenditure (log)		-1.429		-0.682
		(1.149)		(1.173)
Night Light (log)		-0.190*		-0.156
		(0.109)		(0.104)
Distance to State Capital (log)		-0.221		-0.301
		(0.429)		(0.466)
Constant	3.720***	-15.75**	9.545***	-15.77*
	(0.652)	(6.906)	(0.470)	(9.080)
Total Observations	595	544	595	544
Estimator	OLS	OLS	OLS	OLS
Number of States	29	29	29	29
Number of Districts	595	544	595	544
R-squared	0.095	0.281	0.051	0.253

Notes: Robust standard errors in parenthesis; Statistical significance: ***$p<0.01$, **$p<0.05$, *$p<0.1$

In other words, we test if SC and ST MPs and their political affiliation determine the selection of districts in the *gate keeping* stage. Our results suggest that districts represented by ST MPs are more likely to be selected by the Bank. However, the likelihood of a district selected for World Bank aid is determined by the political affiliation of their SC and ST MPs to the party in central government.

Second, as seen in Map 1 above, some states tended to have higher DPEP allocations and higher proportion of SC and ST MPs compared to others. We therefore include a dummy for those states where representation of SC and ST MPs is very high. Replicating the baseline models using the specific state dummies does not alter our results.

Third, we test whether our results hold when we estimate our baseline models with the amount of aid provided by the World Bank to a district with Poisson Pseudo Maximum Likelihood (PPML). In this instance, we give the value of zero to those districts for which no aid was allocated by the World Bank. We build on Nunnenkamp et al. and Santos Silva, who found that PPML method outperforms OLS estimator with heteroskedasticity problem and with the presence of zero observations in the data.[97] The results estimated using PPML estimator are in line with our previous findings. Fourth, we use World Bank aid per capita (log) as an alternative way to operationalize our dependent variable. Our results remain robust to using a per capita measure of World Bank aid.

Fifth, we estimate all our models by excluding outliers in our dependent variable, i.e., World Bank aid. Excluding the outliers from the sample does not change our main results. This suggests that our results are not driven by outliers in the World Bank aid variable. Second, when dealing with the data on SC and ST population in India, it is noteworthy that some states (and districts) have unusually higher percentage of SC and ST population respectively and hence it is plausible that our results could be driven by the inclusion of these states into the

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[97] Nunnenkamp,Öhler and Andrés 2016; Silva, Tenreyro 2006.

sample. We estimate our models by dropping one state at a time from our models. Our results remain robust when we drop one state at a time from our models.

Finally, we are conscious of not overfitting our regression models. To address this problem, we adopt two approaches. First, we drop all controls which are statistically insignificant in our models, retaining only those controls which are statistically significant. Second, we re-estimate all our models dropping one control variable at a time.[98] The basic results are not affected when we drop the variables which are statistically insignificant. Overall, these findings suggest that our results are robust not only to the size of the sample and alternative methods of operationalization of our main variable of interest but also to alternative estimation techniques.

5. Conclusion and Discussion

In this paper we have shed further light on the politics of subnational aid allocation. Notably, we have shifted the focus from the supply side of aid allocation to the dynamics of recipient demand. We've argued that marginalized constituencies, above and beyond the general poor, may be able to influence aid allocation, especially if they are politically empowered. Our findings give varying levels of support to these contentions. While there is some evidence that areas with high proportions of marginalized constituencies – in our case scheduled castes and tribes in India – receive World Bank education aid above and beyond what we might expect if allocation was based on general measures of need, there is strong and robust support that when these groups are politically empowered they receive significantly more aid. Notably, if an Indian district is represented by a SC/ST member of parliament *who is aligned with the*

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[98] Note that we also use Area Under Curve (AUC) to gauge the predictive power of the variables in the models by dropping one variable at a time to analyze the effect on the model's fit. We find most of our variables have good predictive power.

governing party, they receive up to 800% more education aid from the World Bank compared to districts not represented by an SC/ST MP aligned with the government.

This finding has two implications for the broader aid allocation literature. First, in line with theories of multilateral donors with sufficient "agency slack", we see that the World Bank is able to match action to rhetoric and target its assistance to localities with disadvantaged populations, as characterized be social marginalization above and beyond measures of poverty. These findings are consistent with literature that suggests that the World Bank considers the education rights of the minority in the process of policymaking (Chauhan 2008; Waughray 2010; Zachariah 1972).[99]

There are a number of extensions which might be interesting to see if the theory and results from this paper hold more broadly. While we've used education aid due to the fact that we were able to precisely code what districts the DPEP program was allocated, it would be interesting to see if the results hold or change for different types of aid. Moreover, while we have focused on SC/STs as the marginalized group, to take advantage of the SC/ST policy rule implementation for our identification strategy, it would also interesting to see if the results hold when considering other marginalized groups, perhaps based on religious, ethnic or gender identification.

However, our findings also suggest that the agency of the marginalized population can also influence allocation behavior. Otherwise marginalized constituencies that can "speak for themselves", via representation in government, can influence aid allocation behavior. We argue that this might happen for several reasons, including the ability to reduce search and transaction costs, by facilitating donor access, and by providing donors with input and output legitimacy. These findings broaden our understanding of how international, multilateral, donors interact with both national and subnational actors in recipient countries. However, they also sound a

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[99] Zachariah 1972; Chauhan 2008; Waughray 2010.

cautionary note. If sub-national aid allocation depends on the (relative) empowerment of needy communities then the "squeaky wheels" may "get the grease" while the most marginalized continue to be overlooked.

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Appendix

Appendix 1: List of States

Andhra Pradesh	Dadra & Nagar Haveli*	Jammu & Kashmir	Manipur	Rajasthan
Andaman & Nicobar Islands*	Daman & Diu*	Jharkhand	Meghalaya	Sikkim
Arunachal Pradesh	Delhi*	Karnataka	Mizoram	Tamil Nadu
Assam	Goa	Kerala	Nagaland	Tripura
Bihar	Gujarat	Lakshadweep*	Orissa	Uttar Pradesh
Chandigarh*	Haryana	Madhya Pradesh	Pondicherry*	Uttaranchal
Chhattisgarh	Himachal Pradesh	Maharashtra	Punjab	West Bengal

* denote Union Territories which are administrative divisions and are ruled directly by Government of India.

Appendix 2: Descriptive Statistics

Variables	Mean	Standard Deviation	Minimum	Maximum	Observations
World Bank Education Aid (log)	7.630	9.498	0.00	20.47	682
SC District Population Share	14.644	8.710	0.00	50.11	597
ST District Population Share	14.204	8.896	0.00	53.40	596
SC District Population Share Census	16.405	26.011	0.00	98.09	597
ST District Population Share Census	16.209	25.944	0.00	98.42	596
SC MPs	0.218	0.464	0.00	3.00	682
ST MPs	0.147	0.386	0.00	3.00	682
Total District Population (log)	13.982	1.032	10.35	17.73	593
Rural Population share	0.767	0.188	0.00	1.00	618
District Night light satellite images (log)	5.125	7.276	0.00	63.00	672
District Literacy Rate	63.945	12.871	30.17	96.51	586
Elementary Education Expenditure (log)	10.448	1.161	5.21	11.84	682
Total Government Expenditure (log)	8.600	0.937	6.28	9.78	670
Distance to State Capital (log)	5.008	0.949	0.00	7.22	653

Appendix 3: Data Definition and Sources

Variable	Data definition and sources
World Bank Education Aid (log)	World Bank education aid measured in US$ constant prices (logged). The data at district level is sourced from the World Bank Geocoded Aid Data v1.4.2 from AidData for the 1996, 1997, 1998, 1999, 2001 rounds.
SC District Population Share	The data on SC population/Total Population district-wise is sourced from the Census of India, 2001.
ST District Population Share	The data on ST population/Total Population district-wise is sourced from the Census of India, 2001.
SC MPs	Number of SC MPs elected from SC constituencies is mapped on geographic districts during the 2001 period
ST MPs	Number of ST MPs elected from ST constituencies is mapped on geographic districts during the 2001 period
Total District Population (log)	We access district-wise total population from the Census of India 2001.
Rural Population	Rural population as a share of total population sourced from the Census of India 2001.
District Literacy Rate	Male and female Literacy rate of district-wise sourced from the Census of India 2001.
Elementary Education Expenditure (log)	Government expenditure on elementary education refers to actual expenditure on elementary education at the state level for the period 1991-2001 which is sourced from the https://www.indiastat.com.
Government Expenditure (log)	Total government expenditure includes capital expenditure and revenue expenditure for the period 1991-2001 sourced from the Reserve Bank of India.
Distance to State Capital (log)	Distance to capital means the distance from specific district to capital of state (straight line distance). We applied distance calculator to figure them out. It can be found at https://www.distancefromto.net.

SUPPLEMENTAL ONLINE APPENDIX

TABLES ON ROBUSTNESS CHECKS

Table A1: Probability of securing World Bank education aid and SC, ST population share

	(1) p (WB Aid)	(2) p (WB Aid)	(3) p (WB Aid)
SC Population share (Current)	0.0330**		0.0374**
	(0.0141)		(0.0153)
ST Population share (Current)		-0.00666	0.000403
		(0.00772)	(0.00830)
SC Population share (Past)	0.0110		0.0114
	(0.0142)		(0.0145)
ST Population share (Past)		0.000382	0.00330
		(0.00719)	(0.00771)
Population (log)	0.117	0.0954	0.137
	(0.109)	(0.109)	(0.112)
Rural Population share	0.852	1.074*	0.860
	(0.663)	(0.629)	(0.667)
Literacy Rate	-0.0229***	-0.0251***	-0.0217***
	(0.00666)	(0.00658)	(0.00675)
Elementary Education Expenditure (log)	0.610***	0.618***	0.623***
	(0.179)	(0.175)	(0.180)
Government Expenditure (log)	-0.130	-0.101	-0.123
	(0.198)	(0.194)	(0.202)
Night Light (log)	-0.0620**	-0.0427*	-0.0614**
	(0.0277)	(0.0245)	(0.0281)
Distance to State Capital (log)	0.0251	0.0161	0.0166
	(0.0900)	(0.0865)	(0.0914)
Constant	-6.902***	-6.240***	-7.547***
	(1.487)	(1.648)	(1.732)
Total Observations	544	544	544
Estimator	Probit	Probit	Probit
Number of States	29	29	29
Number of Districts	545	545	544

Notes: Reports coefficients
Robust standard errors in parenthesis
Statistical significance: ***p<0.01, **p<0.05, *p<0.1

Table A2: Probability of securing World Bank education aid allocation and SC, ST MPs

	(1) p (WB Aid)	(2) p (WB Aid)	(3) p (WB Aid)
SC MPs	0.102		0.111
	(0.138)		(0.138)
SC Population share (Current)	0.0310**		0.0346**
	(0.0142)		(0.0154)
SC Population share (Past)	0.0109		0.0117
	(0.0141)		(0.0144)
ST MPs		0.319*	0.344*
		(0.178)	(0.185)
ST Population share (Current)		-0.00966	-0.00318
		(0.00778)	(0.00830)
ST Population share (Past)		-0.000600	0.00235
		(0.00726)	(0.00766)
Population (log)	0.115	0.0588	0.0977
	(0.109)	(0.114)	(0.118)
Rural Population share	0.863	1.024	0.812
	(0.661)	(0.631)	(0.667)
Literacy Rate	-0.0228***	-0.0251***	-0.0218***
	(0.00666)	(0.00662)	(0.00681)
Elementary Education Expenditure (log)	0.605***	0.619***	0.621***
	(0.180)	(0.176)	(0.181)
Government Expenditure (log)	-0.128	-0.0998	-0.127
	(0.199)	(0.194)	(0.203)
Night Light (log)	-0.0637**	-0.0429*	-0.0637**
	(0.0282)	(0.0244)	(0.0285)
Distance to State Capital (log)	0.0289	0.00412	0.0103
	(0.0897)	(0.0865)	(0.0915)
Constant	-6.853***	-5.638***	-6.820***
	(1.480)	(1.719)	(1.811)
Total Observations	544	544	544
Estimator	Probit	Probit	Probit
Number of States	29	29	29
Number of Districts	544	544	544

Notes: Reports coefficients
Robust standard errors in parenthesis
Statistical significance: ***p<0.01, **p<0.05, *p<0.1

Table A3: Probability of securing World Bank education aid allocation and SC, ST MPs

	(1)	(2)
	p (WB Aid)	p (WB Aid)
SC MPs **X** Political affiliation	0.961*	
	(0.551)	
SC MPs **X** (1 − Political affiliation)	-0.119	
	(0.173)	
Political affiliation	-0.917	
	(0.605)	
SC Population share (Current)	0.0314**	
	(0.0143)	
SC Population share (Past)	0.0134	
	(0.0141)	
ST MPs **X** Political affiliation		4.639***
		(0.411)
ST MPs **X** (1 − Political affiliation)		-0.223
		(0.314)
ST Population share (Current)		-4.182***
		(0.481)
ST Population share (Past)		-0.00834
		(0.00769)
Political affiliation		0.000579
		(0.00710)
Population (log)	0.116	0.0804
	(0.110)	(0.112)
Rural Population share	0.986	1.021
	(0.665)	(0.632)
Literacy Rate	-0.0228***	-0.0253***
	(0.00672)	(0.00661)
Elementary Education Expenditure (log)	0.631***	0.655***
	(0.180)	(0.177)
Government Expenditure (log)	-0.164	-0.147
	(0.199)	(0.197)
Night Light (log)	-0.0622**	-0.0418*
	(0.0281)	(0.0243)
Distance to State Capital (log)	0.0325	0.0126
	(0.0887)	(0.0867)
Constant	-6.968***	-5.952***
	(1.497)	(1.707)
Total Observations	595	544
Estimator	Probit	Probit
Number of States	29	29
Number of Districts	595	544

Notes: Reports coefficients
Robust standard errors in parenthesis
Statistical significance: ***p<0.01, **p<0.05, *p<0.1

Table B1: World Bank education aid and SC, ST MPs – Difference-in-Difference

	(1) WB Aid (ln)	(2) WB Aid (ln)	(3) WB Aid (ln)	(4) WB Aid (ln)
SC MPs			7.791***	
			(2.219)	
SC Population share (Current)	0.194		0.0822	
	(0.299)		(0.296)	
SC Population share (Past)	-0.196		-0.101	
	(0.181)		(0.184)	
ST MPs				4.345**
				(2.062)
ST Population share (Current)		-0.0389		-0.0131
		(0.193)		(0.200)
ST Population share (Past)		0.0240		-0.00126
		(0.139)		(0.153)
Population (log)	1.054	2.054	0.720	0.483
	(2.059)	(3.389)	(2.061)	(3.742)
Rural Population share	4.261	49.34**	8.668	52.03**
	(12.26)	(21.33)	(11.89)	(20.77)
Literacy Rate	-0.222	-0.217	-0.274	-0.183
	(0.172)	(0.180)	(0.189)	(0.185)
Elementary Education Expenditure (log)	4.601	-10.50	6.445	-7.089
	(4.831)	(10.87)	(4.994)	(9.864)
Government Expenditure (log)	1.471	9.652	-0.182	6.138
	(4.786)	(6.056)	(5.283)	(5.402)
Night Light (log)	0.00212	0.442	0.135	0.760
	(0.255)	(0.583)	(0.261)	(0.604)
Distance to State Capital (log)	-0.957	0.501	-0.705	0.132
	(1.424)	(4.145)	(1.191)	(3.902)
Constant	-51.16	-21.44	-61.03	-14.56
	(40.64)	(104.6)	(44.88)	(101.9)
Sample Districts	**SC aligned**	**SC aligned**	**ST aligned**	**ST aligned**
Total Observations	79	38	79	38
Estimator	OLS	OLS	OLS	OLS
Number of Districts	79	38	79	38
R-squared	0.219	0.347	0.273	0.404

Notes: Robust standard errors in parenthesis
Statistical significance: ***p<0.01, **p<0.05, *p<0.1

Table C1: World Bank education aid and SC, ST MPs – with State specific dummies

	(1) WB Aid (ln)	(2) WB Aid (ln)	(3) WB Aid (ln)	(4) WB Aid (ln)
SC MPs	1.075			
	(0.798)			
ST MPs		1.932**		
		(0.960)		
SC MPs **X** Political affiliation			7.951***	
			(1.006)	
SC MPs **X** (1 − Political affiliation)			-0.724	
			(1.009)	
Political affiliation			-6.952***	
			(1.947)	
SC Population share (Current)	0.138		0.136	
	(0.0957)		(0.0953)	
SC Population share (Past)	0.0414		0.0634	
	(0.0933)		(0.0921)	
ST MPs **X** Political affiliation				4.698***
				(1.200)
ST MPs **X** (1 − Political affiliation)				0.505
				(1.566)
ST Population share (Current)		-0.0489		-0.0469
		(0.0431)		(0.0431)
ST Population share (Past)		0.00439		0.00588
		(0.0410)		(0.0410)
Political affiliation				-2.718
				(2.823)
Population (log)	0.166	0.0500	0.170	0.0524
	(0.571)	(0.621)	(0.576)	(0.619)
Rural Population share	3.637	4.925	4.421	4.803
	(3.467)	(3.421)	(3.411)	(3.444)
Literacy Rate	-0.173***	-0.181***	-0.171***	-0.179***
	(0.0346)	(0.0352)	(0.0348)	(0.0353)
Elementary Education Expenditure (log)	3.789***	3.866***	3.984***	3.981***
	(1.010)	(0.980)	(1.002)	(0.986)
Government Expenditure (log)	-1.312	-1.167	-1.584	-1.347
	(1.165)	(1.191)	(1.160)	(1.211)
Night Light (log)	-0.188*	-0.146	-0.181*	-0.146
	(0.110)	(0.105)	(0.110)	(0.106)
Distance to State Capital (log)	-0.219	-0.363	-0.246	-0.357
	(0.443)	(0.466)	(0.432)	(0.468)
Constant	-15.32**	-12.88	-15.88**	-12.68
	(6.920)	(9.130)	(6.921)	(9.197)
Total Observations	544	544	544	544
Estimator	OLS	OLS	OLS	OLS
States Dummy	Yes	Yes	Yes	Yes
Number of States	29	29	29	29
Number of Districts	544	544	544	544
R-squared	0.276	0.259	0.287	0.262

Notes: Robust standard errors in parenthesis

Statistical significance: ***p<0.01, **p<0.05, *p<0.1

Table D1: World Bank education aid and SC, ST MPs – Poisson estimates

	(1) WB Aid (ln)	(2) WB Aid (ln)	(3) WB Aid (ln)	(4) WB Aid (ln)
SC MPs	0.0883			
	(0.0763)			
ST MPs		0.257**		
		(0.103)		
SC MPs **X** Political affiliation			0.746***	
			(0.117)	
SC MPs **X** (1 − Political affiliation)			-0.126	
			(0.0940)	
Political affiliation			-0.638***	
			(0.182)	
SC Population share (Current)	0.0233*		0.0219*	
	(0.0129)		(0.0129)	
SC Population share (Past)	9.95e-05		0.00463	
	(0.0125)		(0.0124)	
ST MPs **X** Political affiliation				0.278**
				(0.117)
ST MPs **X** (1 − Political affiliation)				0.0172
				(0.237)
ST Population share (Current)				0.0600
				(0.281)
ST Population share (Past)		0.000517		0.000922
		(0.00624)		(0.00604)
Political affiliation				0.0600
				(0.281)
Population (log)	0.119	0.0816	0.118	0.0892
	(0.0760)	(0.0824)	(0.0769)	(0.0816)
Rural Population share	0.733	0.938*	0.897*	0.924*
	(0.538)	(0.538)	(0.540)	(0.539)
Literacy Rate	-0.0149***	-0.0150***	-0.0143***	-0.0150***
	(0.00458)	(0.00442)	(0.00465)	(0.00437)
Elementary Education Expenditure (log)	0.528***	0.583***	0.573***	0.607***
	(0.144)	(0.145)	(0.145)	(0.147)
Government Expenditure (log)	-0.154	-0.157	-0.200	-0.186
	(0.128)	(0.138)	(0.131)	(0.141)
Night Light (log)	-0.0465**	-0.0353	-0.0477**	-0.0349
	(0.0233)	(0.0218)	(0.0237)	(0.0217)
Distance to State Capital (log)	0.0727	0.0397	0.0573	0.0409
	(0.0648)	(0.0670)	(0.0619)	(0.0669)
Constant	-4.131***	-3.735***	-4.307***	-3.843***
	(1.121)	(1.330)	(1.109)	(1.334)
Total Observations	544	544	544	544
Estimator	Poisson	Poisson	Poisson	Poisson
Number of States	29	29	29	29
Number of Districts	544	544	544	544

Notes: Robust standard errors in parenthesis
Statistical significance: ***p<0.01, **p<0.05, *p<0.1

Table E1: World Bank education aid and SC, ST MPs – Per capita measure

	(1)	(2)	(3)	(4)
	WB Aid PC (ln)	WB Aid PC (ln)	WB Aid PC (ln)	WB Aid PC (ln)
SC MPs	0.0540			
	(0.224)			
ST MPs		0.640**		
		(0.272)		
SC MPs **X** Political affiliation			1.472**	
			(0.630)	
SC MPs **X** (1 − Political affiliation)			-0.359	
			(0.270)	
Political affiliation			-1.402*	
			(0.765)	
SC Population share (Current)	0.0594**		0.0590**	
	(0.0292)		(0.0292)	
SC Population share (Past)	-0.00790		-0.00351	
	(0.0277)		(0.0274)	
ST MPs **X** Political affiliation				1.086***
				(0.367)
ST MPs **X** (1 − Political affiliation)				0.282
				(0.413)
Political affiliation				-0.348
				(0.869)
ST Population share (Current)		-0.0195		-0.0192
		(0.0121)		(0.0120)
ST Population share (Past)		0.00632		0.00684
		(0.0113)		(0.0112)
Population (log)	-0.242	-0.304*	-0.239	-0.304*
	(0.157)	(0.169)	(0.158)	(0.168)
Rural Population share	0.961	1.414	1.135	1.370
	(0.920)	(0.901)	(0.909)	(0.903)
Literacy Rate	-0.0422***	-0.0425***	-0.0417***	-0.0420***
	(0.00968)	(0.00984)	(0.00974)	(0.00990)
Elementary Education Expenditure (log)	1.118***	1.083***	1.163***	1.104***
	(0.252)	(0.238)	(0.250)	(0.239)
Government Expenditure (log)	-0.340	-0.226	-0.403	-0.262
	(0.290)	(0.291)	(0.290)	(0.293)
Night Light (log)	-0.0457	-0.0380	-0.0441	-0.0386
	(0.0293)	(0.0284)	(0.0292)	(0.0286)
Distance to State Capital (log)	-0.0473	-0.0762	-0.0551	-0.0745
	(0.120)	(0.124)	(0.118)	(0.125)
Constant	-1.560	-0.618	-1.703	-0.538
	(1.873)	(2.486)	(1.876)	(2.497)
Total Observations	542	542	542	542
Estimator	OLS	OLS	OLS	OLS
Number of Districts	542	542	542	542
R-squared	0.235	0.220	0.242	0.221

Notes: Robust standard errors in parenthesis

Statistical significance: ***$p<0.01$, **$p<0.05$, *$p<0.1$

Table F1: World Bank education aid and SC, ST MPs –
dropping statistically insignificant variables

	(1) WB Aid (ln)	(2) WB Aid (ln)	(3) WB Aid (ln)	(4) WB Aid (ln)
SC MPs	0.996			
	(0.790)			
ST MPs		1.930**		
		(0.948)		
SC MPs **X** Political affiliation			7.439***	
			(0.991)	
SC MPs **X** (1 − Political affiliation)			-0.616	
			(1.061)	
Political affiliation			-6.524***	
			(1.925)	
SC Population share (Current)	0.150*		0.154*	
	(0.0908)		(0.0906)	
SC Population share (Past)	0.0358		0.0472	
	(0.0874)		(0.0867)	
ST MPs **X** Political affiliation				4.785***
				(1.346)
ST MPs **X** (1 − Political affiliation)				0.990
				(1.497)
Political affiliation				-3.148
				(2.890)
ST Population share (Current)		-0.0649*		-0.0631*
		(0.0362)		(0.0364)
ST Population share (Past)		0.0237		0.0254
		(0.0373)		(0.0377)
Literacy Rate	-0.190***	-0.193***	-0.191***	-0.191***
	(0.0301)	(0.0304)	(0.0301)	(0.0310)
Elementary Education Expenditure (log)	2.209***	2.457***	2.180***	2.452***
	(0.301)	(0.341)	(0.300)	(0.345)
Night Light (log)	-0.132***	-0.139***	-0.136***	-0.139***
	(0.0352)	(0.0372)	(0.0356)	(0.0374)
Constant	-4.589	-3.561	-4.312	-3.642
	(3.712)	(4.725)	(3.697)	(4.725)
Total Observations	575	575	575	575
Estimator	OLS	OLS	OLS	OLS
Number of Districts	575	575	575	575
R-squared	0.265	0.245	0.274	0.246

Notes: Robust standard errors in parenthesis
Statistical significance: ***$p<0.01$, **$p<0.05$, *$p<0.1$