

Welfare programs and local political participation: the effects of affordable housing in Mumbai*

Tanu Kumar[†]

May 4, 2019

Abstract

How do welfare programs affect beneficiaries' local political activity in developing countries? Many welfare programs are implemented by local governments and entail continued delivery to, or use by, beneficiaries over time. I argue that recipients are therefore motivated to participate in local politics to protect the quality of benefits. I support the argument with a natural experiment consisting of interviews of 834 applicants of subsidized home price lotteries in Mumbai, India. In this case, I predict that beneficiaries will protect their housing welfare benefits by demanding improvements to the neighborhoods in which lottery apartments are located. Winning an apartment increases both reported political participation to improve neighborhoods and knowledge about local politics. Winners who choose to rent out the apartments also report taking action to improve neighborhoods. The study highlights both the electoral and non-electoral political effects of programmatic policies and causes of civic participation among diverse groups. [9330 words]

*This project has been supported by the J-PAL Governance Initiative, the Weiss Family Program Fund for Development Economics at Harvard University, the Institute of International Studies at the University of California, Berkeley, and the American Political Science Association Centennial Center. Research has been approved by the Committee for Protection of Human Subjects at the University of California, Berkeley, protocol 2017-04-9808. A pre-analysis plan has been registered with EGAP (<http://egap.org/registration/2810>). I am extremely grateful for Partners for Urban Knowledge Action Research, its "barefoot researchers," and particularly Nilesh Kudupkar for assistance with data collection. I thank Pradeep Chhibber, Alison Post, Edward Miguel, and Joel Middleton for advice and mentorship. I also received valuable feedback from Claire Adida, Anustubh Agnihotri, Adam Auerbach, Caroline Brandt, Christopher Carter, Aditya Dasgupta, Ritika Goyal, F. Daniel Hidalgo, Alisha Holland, Pranav Gupta, Nirvikar Jassal, Agustina Paglayan, Bhumi Purohit, Matthew Stenberg, Valerie Wirtschafter, two anonymous students at Texas A&M University, and participants at CaliWEPS 2018 and HEWG 2019. Finally and most importantly, I am indebted to the hundreds of survey and interview respondents who gave their time to this study.

[†]Travers Department of Political Science, UC Berkeley. [tkumar\[at\]berkeley\[dot\]edu](mailto:tkumar[at]berkeley[dot]edu)

1 Introduction

Governments in many developing countries devote nontrivial portions of their budgets to social welfare spending. Between 2000 and 2005, for example, the median spending on health and education programs among countries eligible for concessional lending from the International Monetary Fund increased from 5.19 to 6.09 percent of gross domestic product, or by roughly 12%.¹ In India, ambitious central and state governments spend on numerous policies, including pensions, electrification, employment, financial inclusion, and affordable housing programs. Do these policies affect political participation among beneficiaries?

Seeking to understand the political motivations for spending on such initiatives, several scholars (e.g. Dasgupta 2015; De la O 2013; Imai *et al.* 2019; Manacorda *et al.* 2011; Zucco 2013) have investigated the electoral returns to specific welfare programs. The study of whether beneficiaries reward implementing politicians can be seen as part of a broader understanding of politics as an exchange of votes for resources, or clientelism (Kitschelt and Wilkinson 2007). But welfare benefits are rarely simple transfers of cash or favors. Instead, they are often policies that purportedly aim, either through sustained delivery or large transfers of benefits intended for sustained use, to substantially change the lives of beneficiaries. It is likely that their effects go beyond inducing reciprocal voting for implementers. Indeed, we know from an extensive literature on policy feedback from the United States and Europe (see Campbell [2012] for a review) that welfare policies have the potential to greatly change the interests, capacities, and beliefs of beneficiaries.

I argue that certain welfare policies can have an effect on the everyday political ac-

¹These data are part of Clements *et al.* 2013 and can be found here (<https://www.imf.org/external/pubs/ft/sdn/2011/data/sdn1115.zip>).

tivity – such as negotiation with politicians, bureaucrats, and brokers for goods and services – that forms a cornerstone of political participation in developing countries. In particular, policies that entail sustained delivery or sustained use of benefits allow recipients to enjoy the benefits over time. As a result, recipients may seek to ensure that the value of these benefits remains the same or increases over the time that they remain beneficiaries of the program in question. I further claim that monitoring the value of one’s benefits entails local level political participation because while many welfare programs are crafted by national and state governments, they may be administered at the local government level, where there can be a great deal of variation in the quality of services and programs (Post *et al.* 2018). Quality can take on many dimensions, several of which local political participation may improve. For example, recipients of disability programs may demand more timely payments, or those participating in an employment guarantee program may wish to influence the types of projects on which they work. In line with this framework, I predict that welfare programs that provide either the sustained delivery or sustained use of benefits over time should increase recipients’ participation in local politics, change their reasons for participation, and increase their knowledge of local politics. The specific demands that beneficiaries make should vary with the welfare program in question.

To support my hypotheses, I use a natural experiment to study the effects of receiving a subsidized home for purchase in Mumbai, India. The program is implemented through a lottery system, allowing causal identification of its effects. Furthermore, these affordable housing programs entail large benefits that are likely to have a substantial impact on the lives of beneficiaries. Unlike ration cards or employment programs wherein the government is clearly responsible for program quality, the lottery homes entail the one-time delivery of a benefit for *private* ownership, making beneficiaries’ continued demands that the government improve the benefit particularly surprising. But as local

level service provision to neighborhoods of even privately owned homes remains a public function, I argue that recipients will seek to improve the quality of their benefits by demanding that local governments better the communities in which homes are located.

This study is based on original interviews of 834 winners and non-winning applicants of multiple affordable housing lotteries conducted in Mumbai in 2012 and 2014. I find that on average, winners are roughly 13 percentage points more likely to report individually approaching bureaucrats and politicians to demand improvements to their local communities, and about 11 percentage points more likely to report doing so in groups. Winners are also an estimated 22.7 percentage points more likely to report voting for candidates on the basis of concerns about neighborhood improvements. I also estimate that winners are 13 percentage points more likely to correctly name a local elected official.

This local level participation is not confined only to those living in the new apartment buildings. Winners are not obligated to relocate to the homes, but can rent them out. Even so, landlords, or those who rent out the homes, may seek to improve communities to increase the rental or resale values of the homes. Fifty-nine percent of landlords travel considerable distances to the lottery homes to participate in collective action in the communities in which they own homes but do not live, suggesting strong incentives for organizing that are separate from the effects of social pressure within a community.

In addition to shedding light on the political effects a large and understudied policy, these findings point to an avenue besides reciprocity through which programmatic policies can affect electoral behavior, namely by changing the motivations and beliefs of beneficiaries. They also have implications for our understanding of collective action and public goods provision in developing countries. Importantly, demand-making occurs among a diverse group of individuals who previously did not know each other, indicating that given the right incentives, collective action and civic participation can, in fact,

occur among those that do not have an existing stock of social capital.

2 Welfare spending and its effects in India

Since its independence, the Indian government has enacted numerous policies dedicated to supporting its founders' stated goals of poverty alleviation (Varshney 2014, 7). These policies include "schemes", or programs, and subsidies implemented both at the central and state levels that target different groups. They may be inadequate or corrupt, and there has been considerable disagreement over whether expenditure on these items has increased, decreased, or remained constant since India's economic liberalization in 1991 (Dev and Mooij 2002; Joshi 2006; Nayar 2009). But the fact remains that such programs affect the lives of millions. Table 1 shows the fraction of respondents of a nationally representative survey who claimed to have benefitted from various programs in 2011 and 2012 (India Human Development Survey- II (IHDS-II) 2016). Because India's population is over one billion, even the Annapurna scheme, a food security program for the elderly from which only 0.2% of the population reportedly benefits (Table 1), will reach roughly two million citizens.

How do such programs shape the political behavior of beneficiaries? To date, much of the analysis of Indian politics has been through the lens of clientelism, wherein public goods and services are seen to be distributed in exchange for votes (Kitschelt and Wilkinson 2007).² As described in this literature, an absence of baseline service provision can create opportunities for rent-seeking among those who govern allocation. For example, representatives at India's municipal, state, and national levels receive "area development funds" to respond to requests made by constituents, and several have found that the use

²See Thachil (2011) for a study of how privately provided goods may generate electoral returns.

Table 1: Fraction of survey respondents reporting benefiting from a given program.

| Benefit | Fraction |
|----------------------------------|----------|
| Old age pension | 0.0908 |
| Widows' pension | 0.0511 |
| Maternity scheme | 0.0287 |
| Disability scheme | 0.0131 |
| Annapurna (food security) scheme | 0.0023 |
| Sanitary latrines | 0.0509 |
| Kisan credit card | 0.0513 |
| Indira Awas Yojana | 0.0514 |
| NREGA | 0.2844 |
| Ration cards | 0.8626 |

¹ Food security for senior citizens.

² Credit scheme for farmers.

³ Rural affordable housing program.

⁴ Mahatma Gandhi National Rural Employment Guarantee Act.

Source: IHDS-II (2011-2012) N= 42,152

of these funds can be strategically targeted to win votes (Jensenius and Chhibber 2018; Auerbach 2016; Bussell). As a result, a natural way to think about the political effects of welfare spending is to study the electoral returns to various programs. Indeed, this is the approach taken by several who study the political effects of the Mahatma Gandhi National Rural Employment Guarantee Act (NREGA) (Dasgupta 2015) in India and cash transfers (De la O 2013; Imai *et al.* 2019; Manacorda *et al.* 2011; Zucco 2013) in other countries.

But of course, political engagement extends well beyond voting. Much of the literature on distributive politics, or the allocation of state goods and services, particularly in India and other developing countries (see Golden and Min 2013 for a review) focuses on citizens' everyday interactions with the state. Scholars describe a struggle for access to goods and services ranging from cash or in-kind transfers (e.g. Stokes 2005;

Nichter 2008) to jobs, roads, and lighting (Auyero 2001; Chhibber and Nooruddin 2004; Auerbach 2016). Beyond simply voting for those who help them, individuals negotiate with intermediaries and collectively place pressure on bureaucrats and officials to get what they need (Scott 1969; Auyero 2001; Chandra 2004; Jha, Rao, and Woolcock 2007; Kitschelt and Wilkinson 2007; Stokes *et al.* 2013; Kruks-Wisner 2018).

5 Many of these studies examine how different types of participation affect or predict the likelihood accessing benefits. I look at this relationship in the other direction: how might becoming a welfare beneficiary affect participation in the “everyday” demand or claim-making (Kruks-Wisner 2018) described by those who study distributive politics?

2.1 Theory: welfare policies and local political participation

10 Many welfare policies can be understood as streams of benefits enjoyed by individuals or groups. I describe the relevant policies as those entailing *sustained use* or *sustained delivery* of benefits over time. Small one-time cash transfers do not fall in either category. In contrast, policies such as pensions or employment guarantees entail sustained delivery over time, while public hospitals or programs such as those that construct sani-
15 tary latrines allow the sustained use of toilet or hospital facilities over time, respectively. Such benefits quite obviously remain part of recipients’ lives even after they first become beneficiaries. As a result, they should seek to ensure that the value of benefits increases or simply does not decrease over the lifetime of the benefit. In other words, welfare benefits can be considered as wealth or asset shocks that recipients will seek to protect.

20 This line of reasoning is supported by a literature on policy feedback from the United States and Europe (see Campbell [2012] for a review) that finds that benefitting from government social welfare can encourage political participation to ensure either the continued or increased receipt of program benefits (e.g. Campbell 2012; Mettler and Soss 2004; Pierson 1993). Also, protests to improve welfare benefits are common in India. In

January 2019, for example, beneficiaries of the NREGA program in Kashmir organized to demand the release of wages that had been delayed for two years.³ In September 2018, senior citizens came together in Delhi to demand an increase to their old-age pension of Rs.200 (about 3 USD) per month.⁴ In yet another example, in May 2018, beneficiaries of Kisan Credit Card loans in Rajasthan protested the mistakenly high interest rates charged by the local branch of the State Bank of India.⁵ But perhaps these news-worthy protests are simply the tip of the iceberg when it comes to political participation among welfare beneficiaries.

Participation in local level politics is *not* necessarily an important way to protect or increase the nominal size of welfare benefits under programs created at the national or state level. For many of the programs listed in Table 1, eligible citizens are given a card that is used to track and receive beneficiaries. For others, such as the housing or latrine programs, benefits are given just once. It is likely that receiving an item entails some amount of political maneuvering for most citizens, but it is unlikely that this would occur during a public meeting. Once a card (or a home or a sanitary latrine) is given, revoking the benefit could be logistically extremely cumbersome, and the funds available for the program in question are not decided at the most local level.

Local governments *are*, however, often responsible for the implementation of welfare programs. For example, Roy (2015) finds that the postmaster in Bihar's Sargana locality once wielded extreme discretion over the timing of payments to NREGA workers. Local governments may thus be responsible for the *quality* of a benefit, where the

³<https://kashmirilife.net/baramulla-mg-nrega-employees-protest-against-continued-fund-shortage-in-srinagar-198463/>

⁴<https://www.ndtv.com/delhi-news/protest-for-universal-old-age-pension-scheme-in-delhi-tomorrow-1924355>

⁵<https://thewire.in/rights/sbi-rajasthan-farmers-extra-interest-kisan-credit-card>

term “quality” encompasses many dimensions affecting the real value of a benefit, from the timeliness of delivery to the cleanliness of certain facilities (Post *et al.* (2018)). In other words, a welfare benefit is no different from any other government provided good or service in that it may insufficient, of poor quality, or not reach those to whom it is promised. Participating in local politics can increase the quality, and therefore real value, of a welfare benefit. Indeed, MacLean (2011) claims that citizens of African countries with some experience with public schools and clinics are more likely to engage in acts of everyday citizenship to improve the quality of schools and clinics. Table 2 also shows that beneficiaries of various Indian welfare programs, with the exception of beneficiaries of certain programs intended for the elderly, report greater attendance of local public meetings wherein they make complaints or demands of local government than non-beneficiaries.

Table 2: Welfare beneficiaries and political participation

| Program | Beneficiaries | Non-beneficiaries | p ¹ |
|----------------------------------|---------------|-------------------|----------------|
| Old age pension | 0.3450 | 0.2879 | 0.0000 |
| Widows’ pension | 0.2922 | 0.2931 | 0.9248 |
| Maternity scheme | 0.3303 | 0.2920 | 0.0053 |
| Disability scheme | 0.3739 | 0.2920 | 0.0000 |
| Annapurna (food security) scheme | 0.2842 | 0.2931 | 0.8491 |
| Sanitary latrines | 0.4371 | 0.2849 | 0.0000 |
| Kisan credit card | 0.4336 | 0.2849 | 0.0000 |
| Indira Awas Yojana | 0.4376 | 0.2847 | 0.0000 |
| NREGA | 0.4398 | 0.2347 | 0.0000 |
| Ration cards | 0.3052 | 0.2173 | 0.0000 |

Fraction of program beneficiaries and non-beneficiaries who report having attended a public meeting called by the village panchayat (gram sabha) / nagarpalika / ward committee in the last year. Source: IHDS-II (2011-2012) N= 42,152.

¹ P-value from a two-tailed t-test.

² Food security for senior citizens.

³ Credit scheme for farmers.

⁴ Rural affordable housing program.

⁴ Mahatma Gandhi National Rural Employment Guarantee Act.

In support of this argument, I test three specific hypotheses. First, welfare beneficiaries are more likely than non-beneficiaries to make demands of local politicians and bureaucrats. I investigate the likelihood of both individual and group-level behavior, but group-level action seems less likely to occur given the fact that beneficiaries do not
5 know each other, thereby making organization costly. Also, beneficiaries are likely to report different motivations for local political participation than those reported by non-beneficiaries. Finally, because of their increased participation, welfare beneficiaries are likely to possess greater knowledge of local politics than non-beneficiaries. The demands that are made, the ways in which reasons for participation change, and the knowledge
10 that beneficiaries gain should vary with the welfare program in question. For example, NREGA beneficiaries may make demands about about the types of projects on which they work, while beneficiaries of pension programs may make demands about the delivery and timeliness of payments. These differing demands should in turn lead to differing motivations for political participation and knowledge of different aspects of
15 local government.

2.2 Applying the theory to affordable housing in Mumbai

The program I study is one in which home purchase prices are subsidized. It allows households to enjoy benefits even without moving; they can rent out the homes and consume the asset as a stream of payments (rental income net of mortgage) instead.⁶ This type of program exists in many cities globally, including those in developing

⁶The program is distinct from a housing program wherein beneficiaries receive subsidized rent (e.g. Barnhardt *et al.* 2017). We can think of the latter policy as *relocation* programs, as households receive benefits only if they choose to relocate. It is also different from land titling (Di Tella *et al.* 2007; Feder and Feeny 1991; Field 2005; Galiani and Schargrodsky 2010) and slum rehabilitation (e.g. Burra 2005), programs that are

and OECD countries, and is particularly common in urban India. Such programs have been spearheaded in major Indian cities by state-level development boards to build low-income housing. Moreover, in 2015, India's federal government announced a plan, Pradhan Mantri Awas Yojana (P-MAY, roughly translated as "The Prime Minister's Dwelling Scheme"), to build 20 million affordable homes by 2022.⁷ Part of this program entails central transfers to subsidize state-level housing programs. More generally, the government has demonstrated a financial commitment to subsidizing housing programs; in 2003-2004, for example, the central government claimed to have spent roughly 1.65% of GDP on this type of program (Nayar 2009, 99). Subsidized housing programs are expensive, extremely common, and virtually unstudied.⁸

This is a program that provides not sustained delivery, but sustained *use* of a benefit over time. Beneficiaries of such programs should be *less* likely to participate in local politics than those of one entailing sustained delivery because the local government may not always be directly responsible for the quality of the benefit. The housing program, for example, entails *ownership* of a home, responsibility for maintenance ostensibly lies with the beneficiary and not the government. As a result, it is not obvious why recipients should continuously participate in local government to improve the quality of the benefit. The program therefore provides a somewhat difficult test of the theory.

I argue that beneficiaries might seek to improve the quality of the benefit by improving aspects of the *neighborhood* in which the home is located. To the extent that local intended to resolve issues of informality and poor service delivery in slums.

⁷This scheme is an extension of what used to be known as Indira Awas Yojana, which dealt mainly with rural homes.

⁸But there is growing interest in this policy type. Similar studies are currently underway in Montevideo and Rio de Janeiro. See pre-analysis plans here (<http://egap.org/registration/255>) and here (<http://egap.org/registration/2912>).

governments provide neighborhood services like sanitation, safety, and electricity, they can be considered responsible for aspects of neighborhood quality. These improvements may increase the quality of life for those living in the apartments (owner-occupiers) and
5 increase the resale value of the homes, benefitting even those who do not choose to live in them (landlords). I therefore predict that beneficiaries are more likely than non-beneficiaries to demand improvements to their communities. I further predict that they will be more likely to vote for candidates who prioritize improving local communities, and, finally, that they will possess greater knowledge about the local bodies tasked with
10 improving communities.

Even while much of the literature on public goods provision highlight incentives and discretion in responsiveness, Mumbai, the site of this study, has a clear process for making and receiving responses to demands for improvements to communities. This is part of a larger trend wherein several state and municipal governments in India have
15 developed a bureaucratic process to handle complaints about government infrastructure and services. In Mumbai, all citizens place a complaint with their administrative ward governments over the phone, in person, through an app, or online. The local administrative ward then assigns each complaint with a number that one can use to track the progress of the complaint as it is passed to the appropriate department. Bureaucrats in
20 the ward office mark the complaint as “closed” once it has been resolved or a reason has been given for why it cannot be resolved.⁹ I scraped the website through which one makes and tracks complaints and found that 87,395 complaints were registered in 2017.¹⁰

⁹The modal remark for a complaint about garbage, for example, is “garbage has been lifted.”

¹⁰In this website, one can look up a complaint by entering the ward, category, and date under which it was filed. If one enters all the possible combinations of these items, it is possible to download a complete set of complaints filed for a given time period. The

As shown in Table 3, 89.5% of these complaints were resolved, with the resolution rate approaching 100% for several categories designated by the municipality.¹¹ This data is supported by qualitative interviews with lottery winners who said that the municipal government was responsive to their complaints.¹²

3 The natural experiment

Using observational evidence to test my hypotheses may generate misleading conclusions due to the fact that welfare beneficiaries are likely to be very different from beneficiaries on a number of dimensions, making it difficult to attribute differences in behavior to the welfare benefit alone. For example, it is likely that those who are politically active are predisposed to seeking out and accessing welfare benefits. For this reason, I make use of a natural experiment wherein allocation of affordable housing is randomized among applicants in Mumbai, India to identify the effects of welfare programs on recipients' local political participation.

The Mumbai Housing and Area Development Authority (MHADA)¹³ runs subsidiary website is here (<https://portal.mcgm.gov.in/portal/>) .

¹¹Of course, there are certain types of complaints that entail costly system-wide repairs or political tradeoffs that do not receive satisfactory responses. Complaints about water pressure or poor timing, for example, often receive the reply "False complaint" or "Water reservoirs have low supply." But the point remains that there is some accessible bureaucratic process in place to ensure that once a complaint is made, it is heard and (sometimes) resolved, particularly for simple problems.

¹²Those working in the office are candid about the fact that the government is much less responsive to the complaints of those squatting illegally.

¹³The agency is a subsidiary of the Maharashtra Housing and Area Development Authority that uses the same acronym. The state development board was formed in 1977 by

Table 3: N complaints made to and resolved by the Municipal Corporation of Greater Mumbai in 2017.

| Category ¹ | Percentage resolved | N |
|-------------------------------|---------------------|--------------|
| Garden and tree | 1.000 | 319 |
| Pest control | 0.992 | 5288 |
| Shops and establishment | 0.991 | 1416 |
| Sewerage operation control | 0.991 | 4618 |
| Solid waste management | 0.983 | 9908 |
| License | 0.975 | 2847 |
| Drainage | 0.950 | 10155 |
| Health | 0.942 | 1577 |
| Roads and traffic | 0.924 | 10456 |
| Storm water drain | 0.923 | 1484 |
| Water supply | 0.899 | 6233 |
| Encroachment | 0.888 | 13022 |
| Repairs to municipal property | 0.878 | 785 |
| Assessment | 0.822 | 297 |
| Colony officer | 0.787 | 980 |
| Buildings | 0.734 | 17210 |
| Factories | 0.669 | 354 |
| Estate | 0.601 | 328 |
| School | 0.577 | 52 |
| Retired employees complaints | 0.031 | 65 |
| Total | 0.895 | 87395 |

¹ Names of categories as they appear on the website.

Collected from <https://portal.mcgm.gov.in/>

dized housing lotteries for economically weaker section (EWS) and low-income group (LIG)¹⁴ urban residents who 1) do not own housing, and 2) who have lived in the state
5 of Maharashtra for at least 15 continuous years within the 20 years prior to the sale. In 2012 and 2014, the EWS group could purchase a 180 square foot apartment for about Rs.1500000 (about 23500 USD at the time), while the LIG group could purchase a 320 square foot apartment for about Rs.2000000 (about 31000 USD).

The homes were sold at a government “fair price” that was 30-60% of market prices.
10 Housing was constructed on land obtained for free from the city’s dismantled textile industry - this land was earmarked specifically for “social” projects and cannot be used for other purposes (Madan 2016). The subsidy estimates are based on neighborhood prices per square foot, but they do not account for the fact that government housing has a lower resale value than privately constructed housing (likely because of the mild
15 social stigma and particular aesthetic associated with government housing). Resale of the apartments is not permitted until 10 years after purchase, but households can put the apartments up for rent. Fifty percent of households in my sample have done so. Finally, households do not pay taxes on their dwelling for five years after they move in.

All applications required a refundable fee of Rs.200 (about 3 USD). At the time of
20 purchase, a downpayment of about 1-2% was required.¹⁵ Winners had access to loans from a state owned bank and most took out 15 year mortgages. While the downpayment and mortgage left this program out of the reach of many of the city’s poorest residents, it the Maharashtra Housing and Area Development Act and was preceded by the Bombay Housing Board, established in 1948. The name of the older agency was something of a misnomer, as its jurisdiction spread across the state.

¹⁴Members of the EWS earn up to 3200 USD/year. Members of the LIG earn up to 7400 USD/year.

¹⁵Prices and downpayments vary by year and apartment location.

gave eligible lower middle-class families without property the opportunity to purchase heavily subsidized apartments. This segment of the urban population was comprised mainly of renters and large extended families sharing small homes.

5 Figure A1 shows the location of the 2012 and 2014 EWS and LIG MHADA apartment buildings and households in the sample at the time of application. The homes are scattered throughout the city. At the time of application, households were permitted to choose the building for which they submitted an application. The MHADA apartment buildings are not in the outskirts of the metropolitan area; they are, instead, near major
10 highways and transit lines. Each is within walking distance of the Mumbai suburban rail network, the main network that millions of city residents use to commute every day. The ability of households to choose their preferred building along with the proximity of the buildings to transit options suggests that these buildings, unlike those studied by Barnhardt *et al.* [2017], are not necessarily isolated or extremely disconnected from
15 winners' neighborhoods at the time of application.

As mentioned above, beneficiaries were selected through a lottery process. In fact, the winners were selected within caste and occupation groups (Table B1), as each apartment building had quotas for these groups within which randomization occurred. Because randomization occurred within these socio-economic groups, the program can be
20 thought of as a stratified randomized experiment. The building/caste-occupation group within which randomization occurred will be referred to as "blocks" from now on. There are several reasons to believe that the this process was fair, or truly randomized. First of all, the lottery was conducted using a protected computerized process.¹⁶ Applicants

¹⁶While this lottery has been in place for at least twenty years, the computerization started in 2010, preventing me from studying earlier lottery cohorts. Interestingly, a handful of control group respondents complained about paying brokers who claimed to be able to help "fix" the lottery and were subsequently never heard from again.

also applied with their Permanent Account Numbers (PAN), which are linked to their bank accounts.¹⁷ Before conducting the lottery, MHADA officials used the PAN numbers to check both whether individuals had applied multiple times for the same lottery round and whether or not they met the criteria for eligibility.¹⁸ The single-application requirement was important in ensuring that the probability of winning remained the same among all applicants in the same group. Finally, I provide randomization checks by demonstrating balance on covariates across winners and non-winning applicants.

3.1 Data collection

I estimate treatment effects for all outcomes based on in-person household surveys of both winning (treatment) and non-winning (control) households. For the 2012 and 2014 lotteries, I procured from the MHADA phone numbers and addresses for winners and a random sample of applicants that were drawn in the same stratified sampling method used for the selection of winners. There were an equal number of treated and control units in each block, and I accessed a total of 1,848 addresses.¹⁹ These addresses were mapped using Google Maps. Addresses that were incomplete (42), outside of Greater Mumbai (600), or could not be mapped (132) were removed from the sample. This

¹⁷A PAN is issued by the Indian Income Tax Department to all eligible for an income tax. Its stated purpose is to minimize tax evasion. It has evolved to become a unique identifier for financial transactions and is mandatory for actions such as opening a bank account or receiving a taxed salary.

¹⁸Prior to each lottery, MHADA released a list of applicants deemed ineligible for the lottery because they had violated any of the income, homeownership, domicile, or single application requirements.

¹⁹Because there are more than 300,000 economically weaker section applicants for roughly 300 spots, I interviewed a random sample of applicants.

left 531 and 532 control and treatment households, respectively. Table B2 demonstrates that even after this mapping procedure, I was left with roughly equal proportions of winners and applicants in each caste/occupation category, lottery income category, and apartment building. Given the assumption that the lottery was truly randomized and the fact that I used pre-treatment addresses for the mapping exercise, there is no reason to expect the mapping exercise to systematically favor treatment or control units. Overall, however, I expect the procedure to have favored wealthier applicants because 1) addresses that could not be mapped often referred to informal settlements, and 2) to create a sample that I could feasibly survey, I also dropped all who lived outside of Greater Mumbai, limiting my sample to urban applicants. Table B3, indeed shows that proportions of membership in certain categories in the mapped sample *are* significantly different from the original full sample obtained from MHADA. Importantly, there are relatively fewer Scheduled Tribe members and more General Population (e.g. Forward Castes) members in the mapped sample than in the full sample provided by MHADA. The mapped sample may thus have slightly higher socio-economic status than the full sample of applicants on average, but I detect no such differences *between* treatment and control groups.

Given that the study was budgeted for a sample of 1000, I randomly selected 500 of the mapped households from each treatment condition to interview. From September 2017-May 2018 (after the Mumbai municipal elections in February 2017), I worked with a Mumbai-based organization to contact the households and conduct interviews.²⁰ The addresses and phone numbers provided by MHADA constituted the contact informa-

²⁰The organization hires its enumerators from local neighborhoods, which is a practice that was very important to the success of contacting my sample households. More information about the firm, Partners for Urban Knowledge Action Research (PUKAR), can be found here (<http://www.pukar.org.in>).

tion for households at the time of application. Non-winners were contacted at these addresses. In cases where they had moved away, neighbors were asked for updated contact information. Winners resided at either the old addresses or new lottery buildings, as they were free to either inhabit their new property or rent it out. Lottery housing cooperative societies were thus first contacted to ascertain which of the winners were living at the apartments. Owner-occupiers were approached at the lottery apartments; landlords were approached at the addresses listed on the application using the procedure developed for non-winners. The survey firm used the same team and survey protocols to approach both winners and non-winners.

In all cases, we attempted to speak to the individual who had filled out the application for the lottery home. The application required providing important and sensitive information such as PAN card numbers; as a result, I assumed that the individual applying was most likely to be the head of the household. In the case a child had applied for the home (likely because the form could be completed online and older children may be better able to use computers and the internet than their parents), enumerators were instructed to speak to the family's primary earner. Given this aim of speaking to individuals who were likely to be working full-time jobs, interviews were conducted on Sundays and weekday evenings. In my sample, 78% of respondents had filled out the application themselves.

3.2 The sample

The data collection process yielded a sample of 834, with 413 of the surveyed households in the control condition and 421 households in the treated condition. Full information on the number of households contacted in each stratum along with reasons for attrition can be found in Table B4. I do not see strong evidence of differential rates of contact for control and treated units; the p-value for the difference in proportion contacted is

0.395. Balance tests for fixed or baseline characteristics among the contacted sample can be found in Table 4. Importantly, there is an equal proportion of those belonging to the *Maratha* caste group, a dominant group in Mumbai and Maharashtra more generally.²¹ In other words, winners and non-winners appear to be similar based on a number of fixed observable covariates and there is no evidence of corruption in the lottery or differential selection into the sample.²²

Although these households fall into the EWS and LIG income categories for the housing lottery, a summary of the assets, housing quality, education levels, and tenure status of the control group respondents reveals that they should not be considered among the lowest income groups in the city (Table 5). They are educated, most have roughly 50% of the household employed and earning, and about 31% claim to have formal employment with either the government or private sector. Most live in dwellings with permanent floors and roofs. As none of the applicants, by rule, owns housing in the state of Maharashtra, they are all living either in rental housing, homes with large families, or self-constructed homes to which they have no title. Many live in Mumbai chawls, or large buildings with shared taps and cheap, single room apartments. I thus describe the

²¹*Kunbi Marathas* have been excluded from this group, as they are considered a “lower” caste group (*jati*) and do not intermarry with other *Marathas*. As there were too many *jatis* to generate a coherent balance test on *jati*, I tested balance on being a member of the dominant caste group. Balance tests on other *jatis* are available upon request.

²²In line with my pre-analysis plan, I also perform an omnibus test to judge whether observed covariate imbalance is larger than would normally be expected from chance alone. This test involves a regression of the treatment indicator on the covariates (Table B5) and calculation of a heteroscedasticity-robust Wald statistic for the hypothesis that all the coefficients on the covariates (other than block dummies) are zero. The p-value for this test is .11.

Table 4: Balance tests on household characteristics

| Variable | Control | Treatment | sd | Pr(> t) |
|-------------------------------------|---------|-----------|-------|-----------|
| OBC ¹ | 0.150 | -0.021 | 0.035 | 0.543 |
| SC/ST ² | 0.080 | -0.018 | 0.026 | 0.499 |
| Maratha ³ | 0.295 | 0.018 | 0.045 | 0.690 |
| Muslim | 0.090 | 0.006 | 0.029 | 0.852 |
| <i>Kutcha</i> ⁴ floor | 0.031 | 0.028 | 0.019 | 0.136 |
| <i>Kutcha</i> ⁴ roof | 0.039 | 0.001 | 0.018 | 0.945 |
| In Mumbai 5 – 10 years | 0.024 | -0.020 | 0.011 | 0.078 |
| In Mumbai > 10 years | 0.148 | -0.031 | 0.037 | 0.400 |
| From Mumbai | 0.097 | 0.023 | 0.030 | 0.454 |
| From the same ward as the apartment | 0.097 | 0.017 | 0.022 | 0.446 |

The “Control” column presents means for winning households. The “Treatment” column presents the difference between winning and non-winning households estimated through an OLS regression of each variable on indicators for winning the lottery. Each regression includes an interaction with the centered block-level indicator for randomization groups. All regressions include HC2 errors. N=834.

¹ Other backward class caste group members

² Scheduled caste or scheduled tribe groups, also known as Dalits.

³ A dominant group in Mumbai and Maharashtra more generally.

⁴ “*Kutcha*” means “rough” or “impermanent”. Variable measured at time of application through recall.

sample as lower-middle class and upwardly mobile.²³

5 4 Results

In this section, I estimate effects of winning the lottery within the mapped sample on reported complaint-making to benefit a neighborhood, motivations for vote choice, and knowledge of local politics. I estimate the treatment effect, β , in the following equation where Y is the outcome, T is an indicator for treatment (winning the lottery), $C_1 \dots C_j$ is the group of fixed (or pre-treatment) covariates used for randomization checks, and
10 $B_1 \dots B_l$ is a set of dummies for the blocks within which randomization occurred:

$$Y = \alpha + \beta T + \sum_1^j \gamma_j C_j + \sum_1^i \eta_i (T * (B_i - \bar{B}_i)) \quad (1)$$

It is likely that certain households apply for the lottery year after year, thereby increasing their probability of winning *any* lottery. I thus only label households as “treated” if they win the lottery in the specific year for which they appear in the sam-
15 ple. Following the pre-analysis plan and Lin (2013), I include an interaction between the treatment indicator and the mean-centered block indicators to account for varying probabilities of treatment assignment within each block.²⁴ I also report simple differences in means between treatment and control units for each outcome in Table B6. Following Imbens and Kolesar (2015), I compute standard errors using the HC2 estimator (MacK-

²³This description is corroborated by an interview conducted with the commissioner of the Mumbai Metropolitan Regional Development Authority, who saw the main beneficiaries the housing program to be lower-middle class households (Madan 2016).

²⁴See this blog post for a discussion of a comparison between this estimator and the more commonly used inverse propensity score weighted estimator.

Table 5: Summary of control group characteristics

| Variable | Control group mean ¹ | (SD) |
|--|---------------------------------|--------|
| <i>Household Assets</i> | | |
| TV | 0.92 | (0.27) |
| Computer | 0.40 | (0.49) |
| Working refrigerator | 0.89 | (0.31) |
| Internet | 0.48 | (0.50) |
| Scooter/2 wheeler | 0.36 | (0.48) |
| Car | 0.06 | (0.24) |
| <i>Housing quality</i> | | |
| Permanent floor | 0.97 | (0.18) |
| Semi-permanent roof | 0.17 | (0.38) |
| Permanent roof | 0.79 | (0.41) |
| Private tap | 0.73 | (0.45) |
| Private latrine | 0.62 | (0.49) |
| <i>Education and labor²</i> | | |
| Percentage of the household employed | 0.48 | (0.25) |
| Years of education | 11.73 | (3.85) |
| Unemployed | 0.03 | (0.18) |
| Wage laborer | 0.12 | (0.33) |
| Government employee | 0.18 | (0.38) |
| Private sector (informal) ³ | 0.43 | (0.50) |
| Private sector (formal) | 0.18 | (0.38) |
| <i>Tenure status</i> | | |
| Migrants | 0.20 | (0.40) |
| Have always lived in Mumbai | 0.81 | (0.39) |
| Renting | 0.57 | (0.50) |
| Sharing/live in a joint family | 0.77 | (0.42) |

¹ Proportions may not add to 100% because of non-response to certain questions.

² Figures not referring to household means refer to the survey respondent.

³ A job is considered to be in the formal sector if individuals are given letters, contracts, or notification of pension schemes upon being hired.

innon and White 1985). I also use a Holm [1979] step-down procedure for controlling the
5 family-wise error rate in the presence of multiple testing.²⁵ While this study potentially
suffers from two-sided noncompliance (8% of treated units did not purchase homes), I
simply conduct an intent-to-treat (ITT) analysis. This choice should bias treatment effects
to zero.

I first measure effects on the extent to which respondents report actually taking ac-
10 tion to improve their communities. I asked about how often they participate in both
individual and group petitioning of politicians and bureaucrats for something benefit-
ting the community. Treatment effects for reported behavior are shown in Figure 1. I
estimate that lottery winners are 13 and 11 percentage points more likely to participate
in individual and group-level complaint-making, respectively.

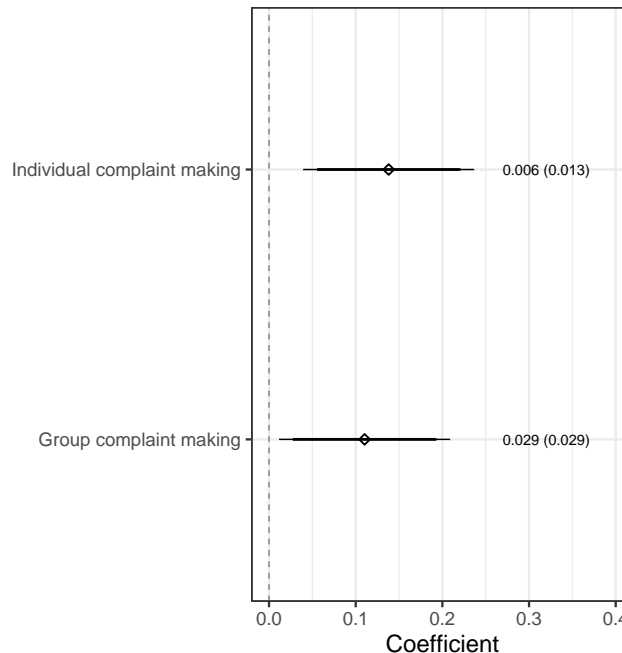
15 I also detect a change in stated motivations for another form of local political partici-
pation, namely voting in local elections (Figure 2).²⁶ The election of 227 ward corporators
to the Municipal Corporation of Greater Mumbai (MCGM)²⁷ occurred in February 2017,
roughly six months prior to the survey. I asked respondents how they made their choice
in this election. Here, I use question in which respondents were not prompted with op-
tions and all of their responses were selected from a multiple choice list. I attempted to

²⁵These are more conservative than the pre-specified Benjamini-Hochberg corrections
for the false discovery rate and are used for this reason. As described in the pre-analysis
plan, I make corrections within “families” of outcomes.

²⁶I did estimate treatment effects for reported voting in the past municipal elections
and state elections. As Figure A3 shows, I do not detect a treatment effect for reported
voting. This could be for many reasons, particularly that all respondents may feel social
pressure to claim that they did, in fact, vote. Control means (Table B6) do show high
rates of reported voting for the control group.

²⁷Also known as the Brihanmumbai Municipal Corporation, or BMC.

Figure 1: Treatment effects for the likelihood of respondents choosing “often” or “sometimes” (as opposed to “rarely” or “never”) when asked “How often in your community do [you]/[a group of individuals jointly] petition government officials and political leaders for something benefitting your community?”

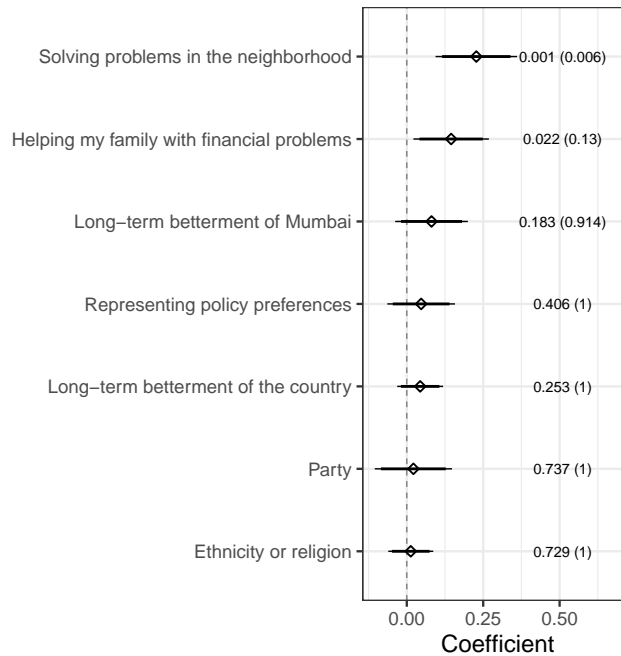


Bars show 90% and 95% confidence intervals. Group means available in Table B6. Full regression output with and without covariate adjustment available upon request. P-values (with with p-values using a Holm 1979 step-down procedure for controlling for the family-wise error rate in parentheses) are shown on the right.

make an exhaustive list of multiple choice options based on responses to a pilot survey
 5 I conducted in March 2017. Those who did not vote are simply assumed to have found none of the listed reasons important enough to motivate a vote. Relative to non-winners, I estimate that winners are 22.7 percentage points more likely to state neighborhood problems as a reported reason for voting.

I also asked whether a member of the household had participated in a neighborhood development association (commonly know as a “society”) in the past month. These associations are neighborhood-level meetings held to discuss common problems in the the community. They exist in all types of urban neighborhoods, from slums (see Auerbach

Figure 2: Treatment effects for responses to “How did you make your vote choice for the municipal elections?” Respondents were asked an open ended question, and enumerators were instructed to select all responses that applied.



Bars show 90% and 95% confidence intervals. Group means available in Table B6. Full regression output with and without covariate adjustment available upon request. P-values (with with p-values using a Holm 1979 step-down procedure for controlling for the family-wise error rate in parentheses) are shown on the right.

2017) to apartment complexes. The range of issues being discussed in these meetings
 5 is enormous and includes water supply, sidewalk construction, water leakages in apartment buildings, local safety, and, of course, the occasional birthday party. The associations are ubiquitous in the lottery apartments. Sixty-two percent of winners reported participating in these meetings.²⁸ Participation in neighborhood meetings in the lottery

²⁸I do not report treatment effects for this variable as they may be misleading because control group households may not have cooperative societies in their buildings or neighborhoods even while they are mandatory in lottery buildings. Control group means can be found in Table B6.

home communities is quite surprising as it is occurring among individuals from different neighborhoods and backgrounds; that they are a random assortment of households suggests that participation is reportedly occurring in spite of an absence of pre-existing social capital. These results are complementary to Barnhardt *et al.*'s (2017) finding that beneficiaries of subsidized *rental* programs often participated in building cooperative society meetings.

Furthermore, when I asked landlords whether they attend meetings in the neighborhood of the lottery home, and 59% reported that they did so "Often" or "Sometimes," a figure only slightly lower than the 64% attendance rate reported by owner-occupiers. The attendance of meetings in the lottery home neighborhoods is particularly surprising as going to these meetings can be very costly in terms of time; 68% of the landlords work 6 or more days a week, and the travel time (one way via transit) to the lottery building neighborhoods takes 1.1 hours on average.²⁹ Finally, the percentages of meeting attendance may actually be underestimates of participation because, according to interviews with development meeting leaders, some landlords also communicate their wishes through WhatsApp or by phone.

Why do we see participation among landlords? Even though landlords do not benefit from the quality of life improvements that may result from changes in the community, they will benefit from home value appreciation that may occur as a result of improved neighborhoods. This phenomenon may motivate owner-occupiers to participate as well. An important prerequisite for this argument is that homeowners must be aware of changes to home values and have some idea of what causes these changes. In my survey, I randomly asked half of the sample of winners about their home prices.

²⁹Travel times are calculated using the Google Maps API and households' addresses at the time of application. The travel time was calculated for a Sunday morning, the time at which I observed most neighborhood improvement society meetings occur.

All respondents were able to provide a figure for the value of the homes. About 16% of
5 respondents were unsure about whether the value of the property had changed since the
purchase, and about 80% claimed it had increased.³⁰ Furthermore, 88% of respondents
claimed that they expected the values to increase in the future. Finally, when presented
with an open-ended question about what they thought affected the values of their prop-
10 erties, about 83% of the responses were similar to “the property value of the surrounding
areas,” 25% included answers mentioning government policies and actions, 15% men-
tioned individual actions, and only 11% mentioned God or luck. About 9% claimed not
to know. Winners are, in fact, aware of the property values and that they can change and
even increase over time.

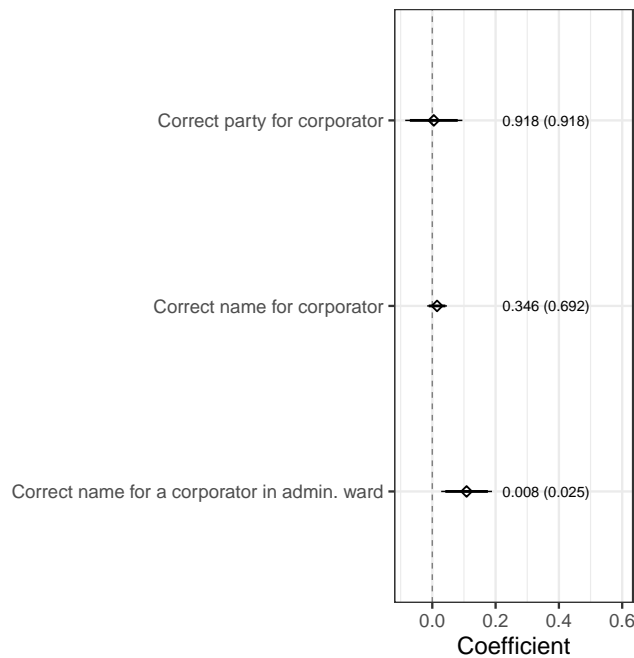
Of course, all of these treatment effects measure changes in reported behavior only. I
15 also asked respondents questions to measure their knowledge of local politics, with the
assumption that greater local political engagement leads to greater knowledge. An indi-
vidual who reports contacting a politician to ask for community improvements is more
likely to know the name of the politician than one who has not claimed to contact a
politician. In Mumbai, the municipal government is responsible for neighborhood prob-
20 lems, as demonstrated by its responsiveness to complaints about local services (Table 3).
I therefore asked respondents for the name and party for the corporator for the electoral
ward in which they lived at the time of the survey. The ward was determined using
the GPS coordinates for baseline addresses for non-winners and winning landlords, and
using lottery apartment addresses for winning owner occupiers.³¹ After determining the

³⁰The remainder were equally split between refusals and those who claimed that the
value had not changed

³¹GIS maps for Mumbai’s electoral wards were generously provided by the Urban
Design Research Institute of Mumbai, India. More information about the organization
can be found here (<http://www.udri.org>).

appropriate electoral ward for each household, I hand coded responses for corporator party and name as either “correct” or “incorrect.” Baseline knowledge is low; only about 2% of the control group can name the relevant corporator correctly. As seen in Figure 3, I do not detect treatment effects for knowing the name or party of the corporator for the ward in which respondents live.

Figure 3: Treatment effects for knowledge of local politics.



Bars show 90% and 95% confidence intervals. Group means available in Table B6. Full regression output with and without covariate adjustment available upon request. P-values (with with p-values using a Holm 1979 step-down procedure for controlling for the family-wise error rate in parentheses) are shown on the right.

But in Mumbai, electoral wards are grouped into 24 larger administrative wards (Figure A2)³² It is the administrative ward office, not the electoral ward office, that is responsible for handling complaints. Mumbai residents therefore think in terms of

³²This portion of the analysis was not pre-registered and can be considered “exploratory.”

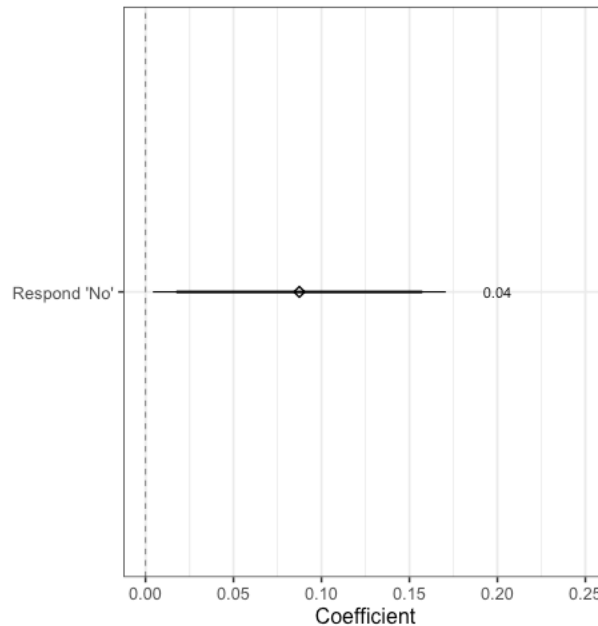
administrative wards, not electoral wards.³³ As a result, we might not expect complaint-
5 making to increase knowledge of the names of the corporators at the electoral ward level,
but we would expect complaint making to increase knowledge of the names of *any* of
the corporators at the higher administrative ward level. Within an administrative ward,
certain corporators may be more active or responsive than others; a respondent may sim-
ply think that the active corporators are their representatives even when they are from
10 a different electoral ward. I coded responses for corporator names as either belonging
to the list of corporators within an administrative ward or not. Indeed, control group
members are over seven times more likely to correctly name a corporator from their ad-
ministrative wards than give the correct name of the corporator for their electoral wards.
I therefore estimate treatment effects for correctly providing the name for a corporator
15 from the administrative ward within which the respondent lived at the time of the in-
terview. Correct responses among the treatment group occur at almost twice the rate of
the control group (Figure 3 and Table B6). Increases in reported complaint-making to
benefit neighborhoods are accompanied by real increases in knowledge of local politics.

4.1 Alternative explanations

20 I have argued that the treatment effects observed arise as a result of increased resources
and a desire to protect the value of the welfare benefit received here, a home. But
participation in petitioning activity might also increase due to improved perceptions of
one's ability to gain a response from a public official. This could be because of actually

³³As a quick check of this claim, I asked 15 individuals on the street in different
administrative wards about their ward membership. Four respondents did not know
which ward they belonged to, and the remaining 11 gave the names of their administra-
tive wards.

Figure 4: Treatment effects for “Do you think you/people like you can hold politicians and bureaucrats accountable for their actions?”



Bars show 90% and 95% confidence intervals. Group means available in Table B6. Full regression output with and without covariate adjustment available upon request. P-values are shown on the right.

receiving a benefit from the government, or it could also be due a feeling of increased
5 social status after becoming a homeowner. Interestingly, however, this does not appear
to be the case. When asked “Do you think you/people like you can hold politicians
and bureaucrats accountable for their actions,” winners overall were actually *more* likely
to say “No” than non-winners (Figure 4). One potential reason for this result is that
winners may have, through the channel of increased demand-making, greater contact
10 with government officials and thus have become disillusioned.

It is also possible that effects are driven by disgruntled members of the control group
who no longer want to participate in local politics after failing to win the lottery. This
seems rather unlikely, however, as the program is truly seen as a lottery; indeed, 74%
and 79% of control and treatment respondents, respectively, respond that “Luck” is re-

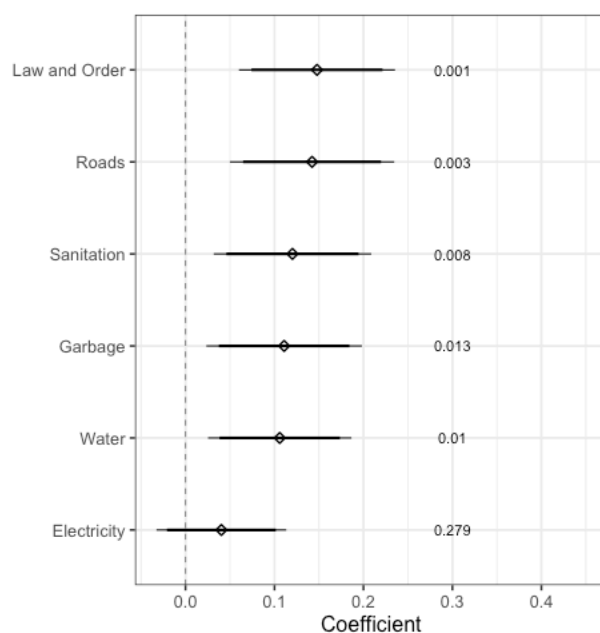
sponsible for deciding who wins. Only 1.6% and 0.4% of the control and treatment
5 groups believe that the MCGM is responsible. As a result, it would seem that not win-
ning the lottery should have no effect on control group members' impressions of local
government capacity and responsiveness.

Finally, it is possible that increased participation in demand-making to improve com-
munities is the result of dissatisfaction with service delivery. Owner-occupiers experi-
10 encing worse services in the new buildings could organize to demand improvements
in their new communities; landlords who have seen better services in the apartment
buildings could be organizing to demand improvements in their baseline communities.
To see whether increased participation is driven by dissatisfaction, I look at responses
to questions that ask if individuals are satisfied with services in the neighborhoods in
15 which they live (Figure 5). I see no evidence for this mechanism; in fact, I see greater
satisfaction with the delivery of most services among lottery winners.

5 Discussion

In this paper, I have argued that welfare beneficiaries in developing countries are more
likely than non-beneficiaries to participate in local politics in order to improve the qual-
20 ity of their welfare benefits. This argument should apply in particular to programs that
entail the sustained delivery or use of benefits over time. I have supported this argument
by showing that an affordable housing program in Mumbai leads beneficiaries to claim
to vote based on neighborhood interests, report greater participation in local politics to
improve communities, and possess greater knowledge of local politics. The paper pro-
vides some of the first sets of findings about the political effects of a large and common
welfare program; rigorously testing hypotheses about demand-making specific to other
welfare programs entailing sustained use or delivery of benefits remains a goal for future

Figure 5: Treatment effects for “How satisfied are you with the following services in your community?” Outcome is a binary indicator for the respondent saying “satisfied” rather than “neither satisfied nor dissatisfied” or “dissatisfied.”



Bars show 90% and 95% confidence intervals. Group means available in Table B6. Full regression output with and without covariate adjustment available upon request. P-values are shown on the right.

work.

5 The results on motivations illuminate new mechanisms by which programmatic policies may change the the political fortunes of implementers. Those studying the electoral effects of programmatic policies (e.g. De La O 2013; Manacorda *et al.* 2011; Zucco 2013) find that such policies increase the electoral support for incumbents. The proposed mechanism (to which Imai *et al.* (2019) point out theoretical objections) is that benefi-
10 ciaries reward implementers at the ballot box. This study shows that welfare programs might actually alter the motivations and knowledge of beneficiaries, in turn potentially affecting electoral behavior in ways that may (or may not) reward implementing parties and politicians at election time.

The results on complaint-making are particularly surprising given that expending ef-
15 fort to improve a program is a collective action problem. This is because individuals who want to improve a welfare benefit may free-ride on the demand-making activity of other beneficiaries. For example, a ration card recipient is disincentivized from complaining about poorly stocked ration shops because she may believe that another recipient or group of recipients will do so and she will benefit from improved shops without ex-
20 pending any effort. This phenomenon impedes both individual and group action to benefit a group as a whole. One way to increase the likelihood of action is to decrease the costs and thereby increase the return on cooperation. Interestingly, beneficiaries of welfare programs can face particularly high costs of political action as they do not know each other and are often from different ethnic groups, a problem highlighted by
25 Habyarimana *et al.* (2007). Furthermore, owner-occupiers are removed from their social networks, a phenomenon Gay [2012] finds leads to decrease political participation among beneficiaries of the Moving to Opportunity program in the United States.

Nevertheless, this study suggests that welfare programs may facilitate collective action among very diverse groups of individuals because they provide the time, money,

and civic skills that Brady *et al.* (1995) find are essential to political activity. There are
5 many reasons for why this may occur. First, the cash or in-kind transfers that form welfare
benefits may generate the material *resources* necessary for action (Campbell 2012;
Lowi 1964; Mettler and Soss 2004). For example, the resources may provide poorer citizens
with the mental bandwidth (Mani *et al.* 2013) and time to engage in local politics.
The resources may also allow them to prioritize other “higher” items on Maslow’s (1943)
10 hierarchy of needs such as belonging and self-esteem, both of which may be fulfilled by
local political participation. They may also decrease the relative opportunity cost of participating
in collective action by decreasing the value of wages relative to the individual’s
overall wealth. Second, the contact with the government generated through the receipt of
welfare benefits can provide beneficiaries with *knowledge* about how governments work.
15 Kruks-Wisner (2018), for example, similarly finds that encounters with governments increase
the likelihood of “making a claim” on the state among rural citizens in India.
Auerbach and Kruks-Wisner (2019) similarly argue that visible social welfare provision
increases citizens’ knowledge of how to make demands.

As demonstrated by the fact that affordable housing beneficiaries make demands
20 to improve communities in which non-beneficiaries live as well, the effect of welfare
programs on complaint-making activities can lead to positive spillovers for all citizens
in general. In terms of the logic outlined by Olson (1965), welfare benefits create a group
of individuals who might benefit *more* from an increase in levels of service provision than
the average citizen, thereby giving them a greater incentive to organize around service
25 improvements. In this way, certain welfare policies can induce *civic* participation among
beneficiaries. As it becomes more institutionalized, this type of behavior is becoming an
important means of participation in the actual policy-making process throughout urban
India, particularly among the middle class (Chakrabarti 2007; Fernandes 2006, 137-173;
Ghertner 2011; Harriss 2006; Sami 2013).

My findings are in line with research from OECD countries that finds that homeownership causes or is correlated with more active citizenship at the local level (DiPasquale and Glaeser 1999; Einstein 2019; Fischel 2009; Hall and Yoder 2018). It is perhaps not entirely surprising that giving people homes causes them to behave like homeowners. If the relationships between income and asset ownership and certain types of political behavior are causal, it is possible that welfare transfers cause individuals to behave like those who already possess the transferred item, income, or asset. Indeed, scholars (e.g. Chatterjee (2004) and Harriss (2006)) have claimed that the Indian wealthy and middle class are more likely to participate in civic action than the poor. The value of any income or asset, after all, is affected by government institutions and services. Even so, I would argue that wealth received through a welfare program may be more likely to yield political participation than those gained through private means, simply because welfare programs are implemented by government bodies and institutions. More generally, a welfare program appears to induce beneficiaries to care about the development of local government capacity, behavior that has thus far been documented primarily among the wealthy and middle class. Government policies can themselves generate demands for development and change.

References

- Adam Michael Auerbach. Clients and Communities: The Political Economy of Party Network Organization and Development in India's Urban Slums. *World Politics*, 68(1): 111–148, January 2016.
- Adam Michael Auerbach. Neighborhood Associations and the Urban Poor: India's Slum Development Committees. *World Development*, 96(C):119–135, 2017.
- Adam Michael Auerbach and Gabrielle Kruks-Wisner. Uneven Expectations: The Geography of Citizenship Practice in Rural and Urban India. 2019.
- Javier Auyero. *Poor People's Politics: Peronist Survival Networks and the Legacy of Evita*. Duke University Press Books, Durham, January 2001.
- Sharon Barnhardt, Erica Field, and Rohini Pande. Moving to Opportunity or Isolation? Network Effects of a Randomized Housing Lottery in Urban India. *American Economic Journal: Applied Economics*, 9(1):1–32, January 2017.
- Henry E. Brady, Sidney Verba, and Kay Lehman Schlozman. Beyond Ses: A Resource Model of Political Participation. *The American Political Science Review*, 89(2):271–294, 1995.
- Sundar Burra. Towards a pro-poor framework for slum upgrading in Mumbai, India. *Environment and Urbanization*, 17(1):67–88, 2005.
- Jennifer Bussell. When are Legislators Partisan? Targeted Distribution and Constituency Service in India. Universidad del Rosario, Bogota, Colombia. URL http://egap.org/sites/default/files/Bussell_%20EGAP20.pdf.
- Andrea Louise Campbell. Policy Makes Mass Politics. *Annual Review of Political Science*, 15(1):333–351, 2012.
- Poulomi Chakrabarti. Inclusion or Exclusion? Emerging Effects of Middle-Class Citizen Participation on Delhi's Urban Poor. *IDS Bulletin*, 38(6):96–104, December 2007.
- Kanchan Chandra. *Why ethnic parties succeed*. Cambridge: Cambridge University Press, 2004.
- Partha Chatterjee. *The Politics of the Governed: Reflections on Popular Politics in Most of the World*. Columbia University Press, March 2004.
- Pradeep Chhibber and Irfan Nooruddin. Do party systems count? The number of parties and government performance in the Indian states. *Comparative Political Studies*, 37(2): 152–187, 2004.

- Benedict Clements, Sanjeev Gupta, and Masahiro Nozaki. What happens to social spending in IMF-supported programmes? *Applied Economics*, 45(28):4022–4033, October 2013.
- Aditya Dasgupta. When Voters Reward Enactment But Not Implementation: Evidence from the World’s Largest Social Program. SSRN Scholarly Paper ID 2454405, Social Science Research Network, Rochester, NY, August 2015. URL <https://papers.ssrn.com/abstract=2454405>.
- Ana L. De La O. Do Conditional Cash Transfers Affect Electoral Behavior? Evidence from a Randomized Experiment in Mexico. *American Journal of Political Science*, 57(1): 1–14, January 2013.
- Sonalde Desai and Reeve Vanneman. National Council of Applied Economic Research, New Delhi. India Human Development Survey (IHDS), 2005. ICPSR22626-v11. *Ann Arbor, MI: Inter-university Consortium for Political and Social Research [distributor]*, pages 02–16, 2016.
- S. Mahendra Dev and Jos Mooij. Social Sector Expenditures in the 1990s: Analysis of Central and State Budgets. *Economic and Political Weekly*, 37(9):853–866, 2002.
- Rafael Di Tella, Sebastian Galiani, and Ernesto Schargrodsy. The formation of beliefs: evidence from the allocation of land titles to squatters. *The Quarterly Journal of Economics*, 122(1):209–241, 2007.
- Denise DiPasquale and Edward L. Glaeser. Incentives and social capital: Are homeowners better citizens? *Journal of Urban Economics*, 45(2):354–384, 1999.
- Katherine Levine Einstein, Maxwell Palmer, and David Glick. Who Participates in Local Government? Evidence from Meeting Minutes. *Perspectives on Politics*, 17:28–46, March 2019.
- Gershon Feder and David Feeny. Land Tenure and Property Rights: Theory and Implications for Development Policy. *The World Bank Economic Review*, 5(1):135–153, January 1991.
- Leela Fernandes. *India’s New Middle Class: Democratic Politics in an Era of Economic Reform*. University of Minnesota Press, 2006.
- Erica Field. Property rights and investment in urban slums. *Journal of the European Economic Association*, 3(2-3):279–290, 2005.
- William A. Fischel. *The Homevoter Hypothesis*. Harvard University Press, June 2009.
- Sebastian Galiani and Ernesto Schargrodsy. Property rights for the poor: Effects of land titling. *Journal of Public Economics*, 94(9):700–729, 2010.

- Claudine Gay. Moving to Opportunity: The Political Effects of a Housing Mobility Experiment. *Urban Affairs Review*, 48(2):147–179, March 2012.
- D. Asher Ghertner. Gentrifying the state, gentrifying participation: Elite governance programs in Delhi. *International Journal of Urban and Regional Research*, 35(3):504–532, 2011.
- Miriam Golden and Brian Min. Distributive Politics Around the World. *Annual Review of Political Science*, 16(1):73–99, 2013.
- James Habyarimana, Macartan Humphreys, Daniel N. Posner, and Jeremy M. Weinstein. Why does ethnic diversity undermine public goods provision? *American Political Science Review*, 101(4):709–725, 2007.
- Andrew Hall and Jesse Yoder. Does Homeownership Influence Political Behavior? Evidence from Administrative Data. 2018. URL <https://www.andrewbenjaminhall.com/homeowner.pdf>.
- John Harriss. Middle-class activism and the politics of the informal working class: A perspective on class relations and civil society in Indian cities. *Critical Asian Studies*, 38(4):445–465, 2006.
- Sture Holm. A Simple Sequentially Rejective Multiple Test Procedure. *Scandinavian Journal of Statistics*, 6(2):65–70, 1979.
- Kosuke Imai, Gary King, and Carlos Velasco Rivera. Do Nonpartisan Programmatic Policies Have Partisan Electoral Effects? Evidence from Two Large Scale Experiments. *Journal of Politics*, 81(2), 2019.
- Guido W. Imbens and Michal Kolesár. Robust Standard Errors in Small Samples: Some Practical Advice. *The Review of Economics and Statistics*, 98(4):701–712, November 2015.
- Francesca Refsum Jensenius and Pradeep Chhibber. Privileging ones own? Voting patterns and politicized spending in India. 2018.
- Saumitra Jha, Vijayendra Rao, and Michael Woolcock. Governance in the Gullies: Democratic Responsiveness and Leadership in Delhis Slums. *World Development*, 35(2):230–246, February 2007.
- Seema Joshi. Impact of economic reforms on social sector expenditure in India. *Economic and Political weekly*, pages 358–365, 2006.
- Herbert Kitschelt and Steven I. Wilkinson, editors. *Patrons, Clients and Policies: Patterns of Democratic Accountability and Political Competition*. Cambridge University Press, Cambridge, UK ; New York, April 2007.

- Gabrielle Kruks-Wisner. The Pursuit Of Social Welfare: Citizen Claim-Making in Rural India. *World Politics*, 70(1):122–163, January 2018.
- Winston Lin. Agnostic notes on regression adjustments to experimental data: Reexamining Freedmans critique. *The Annals of Applied Statistics*, 7(1):295–318, March 2013.
- Theodore J. Lowi. American business, public policy, case-studies, and political theory. *World politics*, 16(4):677–715, 1964.
- James G. MacKinnon and Halbert White. Some heteroskedasticity-consistent covariance matrix estimators with improved finite sample properties. *Journal of econometrics*, 29(3):305–325, 1985.
- Lauren M. MacLean. State Retrenchment and the Exercise of Citizenship in Africa. *Comparative Political Studies*, 44(9):1238–1266, September 2011.
- Urvinder Madan. Personal interview with the chief commissioner of Mumbai’s Metropolitan Region Development Authority., 2016.
- Marco Manacorda, Edward Miguel, and Andrea Vigorito. Government Transfers and Political Support. *American Economic Journal: Applied Economics*, 3(3):1–28, July 2011.
- Anandi Mani, Sendhil Mullainathan, Eldar Shafir, and Jiaying Zhao. Poverty impedes cognitive function. *science*, 341(6149):976–980, 2013.
- Abraham Harold Maslow. A theory of human motivation. *Psychological review*, 50(4):370, 1943.
- Suzanne Mettler and Joe Soss. The consequences of public policy for democratic citizenship: Bridging policy studies and mass politics. *Perspectives on politics*, 2(1):55–73, 2004.
- Baldev Raj Nayar. *The Myth of the Shrinking State: Globalization and the State in India*. Oxford University Press, April 2009.
- Simeon Nichter. Vote Buying or Turnout Buying? Machine Politics and the Secret Ballot. *American Political Science Review*, 102(1):19–31, February 2008.
- Mancur Olson. *The Logic of Collective Action*. Harvard University Press, 1965.
- Paul Pierson. When effect becomes cause: Policy feedback and political change. *World politics*, 45(4):595–628, 1993.
- Alison E. Post, Tanu Kumar, Megan Otsuka, Francesc Pardo-Bosch, and Isha Ray. Infrastructure Networks and Urban Inequality: The Political Geography of Water Flows in Bangalore. 2018. URL <https://watson.brown.edu/southasia/files/southasia/imce/events/Spring2018/Postetal.intermittency4.20.pdf>.

- Indrajit Roy. Class Politics and Social Protection: The Implementation of India's MGN-REGA. *SSRN Electronic Journal*, 2015. URL https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2597964.
- Neha Sami. Power to the People? In Gavin Shatkin, editor, *Contesting the Indian City*, pages 121–144. John Wiley & Sons Ltd., 2013.
- James C. Scott. Corruption, Machine Politics, and Political Change. *The American Political Science Review*, 63(4):1142–1158, 1969.
- Susan C. Stokes. Perverse Accountability: A Formal Model of Machine Politics with Evidence from Argentina. *American Political Science Review*, 99(3):315–325, August 2005.
- Susan C. Stokes, Thad Dunning, Marcelo Nazareno, and Valeria Brusco. *Brokers, Voters, and Clientelism: The Puzzle of Distributive Politics*. Cambridge University Press, New York, N.Y, September 2013.
- Tariq Thachil. Embedded Mobilization: Nonstate Service Provision as Electoral Strategy in India. *World Politics*, 63(3):434–469, July 2011.
- Ashutosh Varshney. *Battles Half Won: India's Improbable Democracy*. Penguin, November 2014.
- Cesar Zucco. When Payouts Pay Off: Conditional Cash Transfers and Voting Behavior in Brazil 2002-10. *American Journal of Political Science*, 57(4):810–822, October 2013.

Appendices

A Figures

Figure A1: Location of the addresses of households in the sample (pink) along with the location of apartment buildings (blue) at the time of application

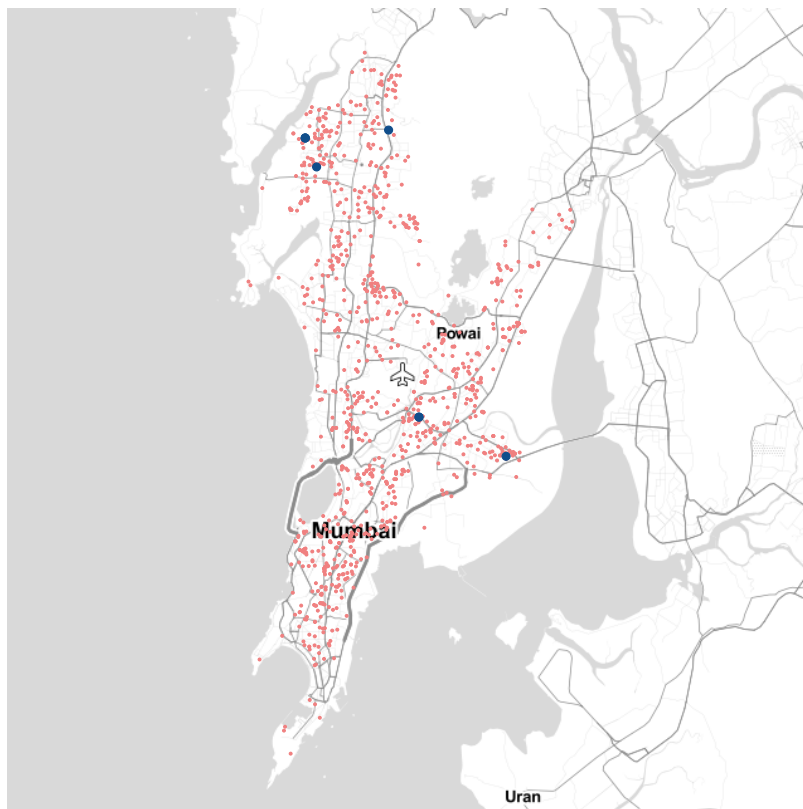


Figure A2: Map of electoral wards in Mumbai. Wards are filled to denote administrative ward membership.

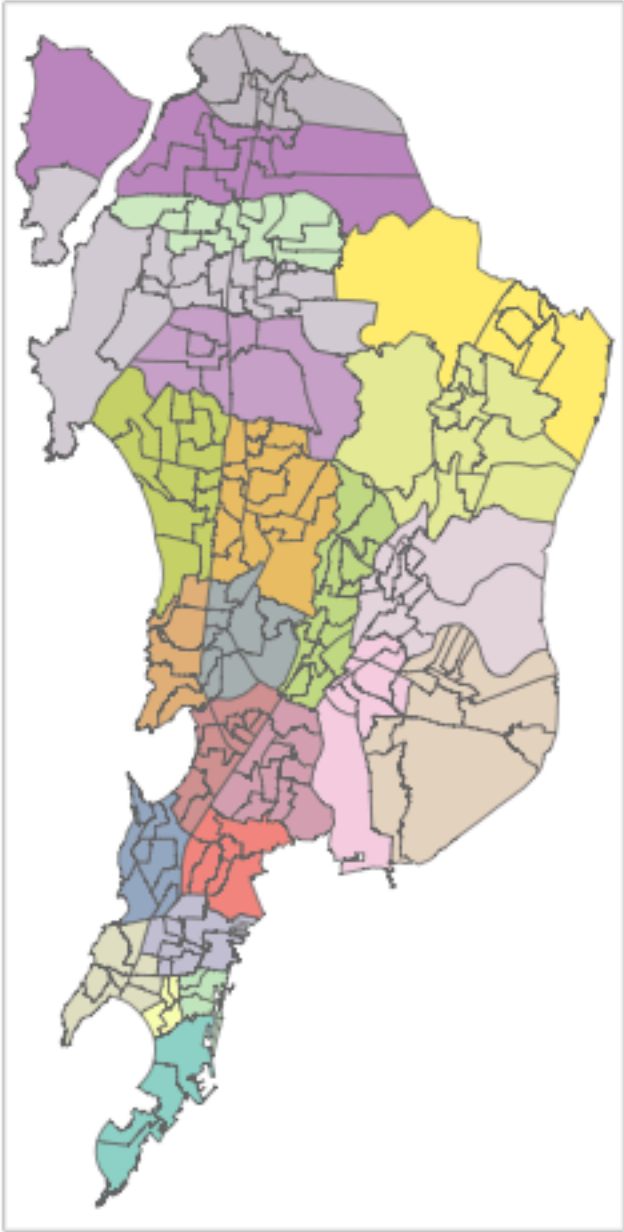
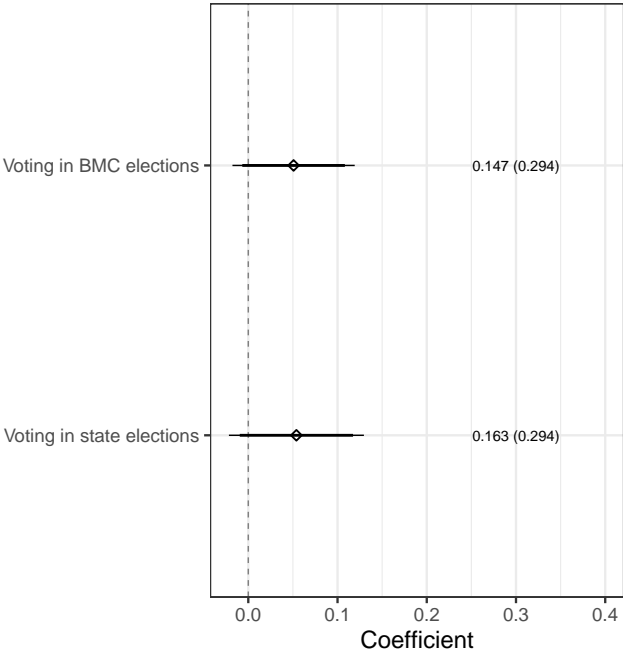


Figure A3: Treatment effects for responding “Yes” to ‘Did you vote in the last MCGM (municipal) or state elections?’



Bars show 90% and 95% confidence intervals. Group means available in Table B6. Full regression output with and without covariate adjustment available upon request. P-values (with with p-values using a Holm 1979 step-down procedure for controlling for the family-wise error rate in parentheses) are shown on the right.

B Tables

Table B1: Caste/occupation category codes

| Code | Category |
|------------|--|
| AR | Artist |
| CG | Central govt. servant occupying staff qrts. |
| DF | Families of defense personall |
| DT | Denotified tribes |
| EX | Ex-servicemen and dependents |
| FF | Freedom fighters |
| GP | General public |
| JR | Journalists |
| ME | MHADA employees |
| MP/MLA/MLC | Ex-members of parliament, legislative assemblies, legislative councils |
| NT | Nomadic tribes |
| PH | Handicapped persons |
| SC | Scheduled castes |
| SG | State government employees who have retired |
| ST | Scheduled tribes |

Table B2: Proportion of members of each category in treatment and control groups after mapping with p-values for two-tailed t-test.

| | Non-winners (C) | Winners (T) | p |
|----------------------------------|-----------------|-------------|-------|
| <i>Caste/Occupation category</i> | | | |
| AR | 0.021 | 0.026 | 0.541 |
| CG | 0.021 | 0.019 | 0.829 |
| DF | 0.017 | 0.008 | 0.164 |
| DT | 0.008 | 0.011 | 0.524 |
| EX | 0.024 | 0.021 | 0.683 |
| FF | 0.006 | 0.015 | 0.129 |
| GP | 0.592 | 0.601 | 0.774 |
| JR | 0.021 | 0.032 | 0.249 |
| ME | 0.009 | 0.021 | 0.130 |
| MP/MLA/MLC | 0.002 | 0.008 | 0.179 |
| NT | 0.019 | 0.011 | 0.316 |
| PH | 0.030 | 0.023 | 0.447 |
| SC | 0.135 | 0.124 | 0.593 |
| SG | 0.062 | 0.047 | 0.284 |
| ST | 0.034 | 0.034 | 0.995 |
| | 1.00 | 1.00 | |
| <i>Lottery income category</i> | | | |
| EWS | 0.314 | 0.298 | 0.563 |
| LIG | 0.686 | 0.702 | 0.563 |
| | 1.00 | 1.00 | |
| <i>Apartment building #</i> | | | |
| 274 | 0.011 | 0.017 | 0.434 |
| 275 | 0.019 | 0.015 | 0.638 |
| 276 | 0.013 | 0.021 | 0.340 |
| 283 | 0.293 | 0.305 | 0.673 |
| 284 | 0.139 | 0.139 | 0.990 |
| 302 | 0.239 | 0.243 | 0.872 |
| 303 | 0.211 | 0.205 | 0.833 |
| 305 | 0.075 | 0.055 | 0.174 |
| | 1.00 | 1.00 | |

Table B3: Proportion of members of each category in full and mapped samples after mapping with p-values for two-tailed t-test.

| | Full Sample | Mapped Sample | p |
|--------------------------------|-------------|---------------|-------|
| AR | 0.022 | 0.024 | 0.740 |
| CG | 0.021 | 0.020 | 0.886 |
| DF | 0.022 | 0.012 | 0.050 |
| DT | 0.014 | 0.009 | 0.250 |
| EX | 0.052 | 0.023 | 0.00 |
| FF | 0.028 | 0.010 | 0.00 |
| GP | 0.520 | 0.596 | 0.00 |
| JR | 0.028 | 0.026 | 0.779 |
| ME | 0.017 | 0.015 | 0.723 |
| MP/MLA/MLC | 0.004 | 0.005 | 0.883 |
| NT | 0.014 | 0.015 | 0.828 |
| PH | 0.026 | 0.026 | 0.947 |
| SC | 0.117 | 0.130 | 0.303 |
| SG | 0.053 | 0.055 | 0.902 |
| ST | 0.063 | 0.034 | 0.00 |
| | 1.00 | 1.00 | |
| <i>Lottery income category</i> | | | |
| EWS | 0.307 | 0.306 | 0.950 |
| LIG | 0.693 | 0.694 | 0.950 |
| | 1.00 | 1.00 | |
| <i>Apartment building #</i> | | | |
| 274 | 0.015 | 0.014 | 0.825 |
| 275 | 0.015 | 0.017 | 0.711 |
| 276 | 0.015 | 0.017 | 0.711 |
| 283 | 0.291 | 0.299 | 0.651 |
| 284 | 0.140 | 0.139 | 0.926 |
| 302 | 0.241 | 0.241 | 0.968 |
| 303 | 0.216 | 0.208 | 0.602 |
| 305 | 0.065 | 0.065 | 0.961 |
| | 1.00 | 1.00 | |

Table B4: Reasons for attrition with p-values for two-tailed t-tests.

| | Control | Treatment | p |
|----------------------------|------------|------------|-------|
| Surveyed | 413 | 421 | 0.373 |
| Address not found | 9 | 7 | 0.617 |
| Home demolished | 1 | 0 | 0.317 |
| Home locked | 5 | 11 | 0.131 |
| Respondent deceased | 1 | 0 | 0.373 |
| Refused | 14 | 20 | 0.294 |
| Unable to locate household | 19 | 10 | 0.090 |
| Incomplete survey | 37 | 31 | 0.453 |
| Total | 500 | 500 | - |

Table B5: Regression of treatment indicator on the covariates

| Covariates ¹ | Winning the housing lottery |
|------------------------------------|-----------------------------|
| OBC | -0.057 (0.057) |
| SC/ST | 0.057 (0.071) |
| Maratha | -0.042 (0.046) |
| Muslim | -0.008 (0.066) |
| <i>Kutcha</i> ² floor | 0.202* (0.118) |
| <i>Kutcha</i> ² roof | -0.252** (0.124) |
| In Mumbai 5 – 10 years | -0.094 (0.219) |
| From Mumbai | 0.213 (0.161) |
| In Mumbai > 10 years | 0.261 (0.165) |
| From the same ward as lottery home | 0.053 (0.061) |
| Block dummies? | Yes |
| F Statistic (df = 91; 742) | 1.2046 |
| N | 834 |
| R ² | 0.129 |
| Adjusted R ² | 0.022 |
| Residual Std. Error | 0.495 (df = 742) |

*p < .1; **p < .05; ***p < .01

¹ Unless otherwise specified, all covariates are dummy variables.

² "*Kutcha*" means "raw" or "impermanent". Variable measured at time of application through recall.

Table B6: Control and treatment means for outcomes with p-values for t-tests.

| Outcome/Response | Control | Treatment | p |
|--|---------|-----------|-------|
| <i>Report voting in the last elections</i> | | | |
| Municipal | 0.835 | 0.855 | 0.572 |
| State | 0.799 | 0.823 | 0.510 |
| <i>Reported reasons for voting in municipal elections</i> | | | |
| Party | 0.352 | 0.406 | 0.142 |
| Ethnicity/Religion | 0.073 | 0.099 | 0.229 |
| Solving...neighborhood problems | 0.482 | 0.583 | 0.007 |
| Helping family... | 0.299 | 0.318 | 0.570 |
| ...programmatic preferences | 0.237 | 0.197 | 0.203 |
| ...betterment of Mumbai | 0.234 | 0.279 | 0.170 |
| ...betterment of the country | 0.059 | 0.107 | 0.021 |
| <i>Reported complaint-making</i> | | | |
| Individual complaints | 0.448 | 0.565 | 0.001 |
| Group complaints | 0.409 | 0.532 | 0.000 |
| <i>Participation in neighborhood development societies</i> | | | |
| Say someone in the family has participated in the past month | 0.360 | 0.624 | 0.00 |
| <i>Knowledge of local politics</i> | | | |
| Correct party for corporator | 0.305 | 0.276 | 0.348 |
| Correct name for corporator | 0.019 | 0.036 | 0.151 |
| Correct name for a corporator in the ward | 0.145 | 0.271 | 0.000 |
| <i>Response to whether...politicians/bureaucrats accountable</i> | | | |
| Say "No" | 0.194 | 0.295 | 0.001 |
| <i>Claiming to be satisfied with neighborhood services</i> | | | |
| Electricity | 0.826 | 0.860 | 0.176 |
| Garbage | 0.709 | 0.765 | 0.069 |
| Sanitation | 0.676 | 0.758 | 0.008 |
| Water | 0.772 | 0.815 | 0.131 |
| Law and order | 0.697 | 0.772 | 0.015 |
| Roads | 0.639 | 0.722 | 0.010 |